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THE BUILDER

A RECORD OF ARCHITECTURE & CONSTRUCTION

VOLUME CX. No. 3820.
Seventy-fourth Year.
Telephone: Regent 5940.

FRIDAY, APRIL 21, 1916.
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THE BUILDER

A RECORD OF ARCHITECTURE AND CONSTRUCTION.

VOL. CX.—No. 3820. APRIL 21, 1916.

THE RAILWAY-STATIONS OF LONDON.

IT is doubtful whether the average citizen bestows more than a casual glance upon the architecture of the terminus of his particular line of railway, much less is he familiar with the character of the whole class. For Londoners have come to accept the metropolitan termini with easy tolerance, notwithstanding their utilitarian variety and ugliness. In a vague kind of way those who frequent the stations realise the brutal driving force of the industrial age which called them into being, and consider such buildings to be mere engineering blemishes on the body of London, softened to an imperceptible degree by the machinations of Soot, Fog, Gas Coal, and Company. Yet these emergency exits to the outer world have a charm entirely their own. It rouses the imagination to think of the steel web enmeshing the fair counties of England, bringing distant cities within a few hours' swift journey; moreover it is encouraging to peep behind the scenes at the panting engines that have brought in trains from the Continent or America. To visit the representative stations would need a day's leisure, and if we desired to subject each terminal to critical analysis a week of strenuous labour would not be sufficient. We can, however, conduct a flying tour from the depths of an easy-chair, skim a mass of unintelligible data and statistics, and devote our thoughts solely to the serio-comic aspect of the issue. A start can be made upon the doyen of the band, Euston. In a chronological sense Euston is the oldest and the most important; its adamantine gateway—a monument by Hardwick, symbolising the linking of Birmingham to London in the first years of Victoria's reign—wears even to-day the look of a Gulliver fearful of crushing the Lilliputians.

The original name of the London and Birmingham Railway has long since been swallowed up by the ramifications of the London and North-Western system, an apt modern rendering of the Biblical story of Aaron's rod.

Euston is a secret labyrinth from whence travellers are spirited off in a mysterious way. The hall, with its range of Ionic columns, is strangely Eleusinian; even the officiating priests are doubtful of some of the passages, and to find the hidden platforms denotes an intelligence of a very superior order. It is hard to realise that such a heterogeneous growth of train sheds, stores, and offices heads one of the most scientifically organised railways in the world. Euston as a railway puzzle is interesting and entertaining for its human flavour, but it is not a civic monument like the Gare du Nord in Paris.

Two miles away stands Paddington, with its breezy air of the West Country. It is a structure resembling the hoops of a crinoline. The hotel, garbed by Hardwick in Victorian Italian fashion, with a clasp brooch of Baroque design as its chief jewel, tries to screen the crinoline skeleton, but latterly another hoop has been added to accommodate the expanding figure of the elderly lady. Brunel designed the iron roof in curious Oriental taste and stamped his personality on the place. Frith immortalised it, and every day the incidents of the famous picture are re-enacted.

In the days of the "railway mania" Waterloo was a serious rival to Paddington; what is to be said for it in the throes of reconstruction? The new structure is certainly open and spacious, the plan reflects a continental interest, but it lacks the smoky charm of yesterday.

Waterloo is a military and naval station as befits its appropriate name; it is enormous, and large enough in fact to accommodate an army corps. The architecture of Waterloo, in its second youth, defies analysis. The train sheds are utilitarian, but the refreshment-rooms are luxuriant, and that is all that can be said for it.

For a more glaring example of British incompetence in these matters we can visit the twin stations at Victoria. Oh, that the shade of Pugin could revisit London and edit a new volume of Contrasts, the frontispiece would certainly be the façades of Victoria! Having risked our limbs in a perfect whirlpool of motor traffic, we reach the station-yard and find two buildings joined like Siamese twins in painful solemnity. Neither has the least sympathy for its neighbour, and both express discontent at the lordly insolence of the Grosvenor Hotel, which refuses to recognise the existence of the usurpers. Passing through to the terminus of the Brighton line, we find the longest platforms in England, interminable in perspective, with Clapham Junction at their southern extremity. The western rampart to the station is interesting as a blank wall, but it leaves the enclosure of the South-Eastern and Chatham line to chance. We depart from the twin abortions of Victoria with a feeling of depression and make for Charing Cross.

Here a further surprise awaits us, for it comes as a shock even to those with a knowledge of London to find a terminus thirty seconds from Nelson's Column. How the railway magnates of the mid-Victorian age must have chortled when they secured the demolition of Hungerford Bridge and Market, and how conceited they were to attempt to span the Thames with an economical centipede bridge and to cloak their doings with a nondescript hotel! The promoters of this monstrous scheme evidently feared public censure, for they threw a sop to the Gothic Cerberus by manufacturing a pseudo-mediæval cross, and so found a name for their station. Having broken into London in the west, the directors of those days used the same plans for the bridge and hotel at Cannon-street, only the cross was omitted.

Just across the river Mocatta's Italian rendering of a station façade is buried in a forest of additions. London Bridge recalls a nightmare or troublesome dream. The timorous passenger is faced with impossible approaches, tortuous bridges, fearsome alley-ways, and cavernous entries. The *tout ensemble* is indescribable, and with its crudity is a self-accusing monument to the exigencies of commercial necessity. London Bridge never appears to us in any other light than being an appanage to some greater terminus, an enlarged and more terrible version of a New Cross or a Croydon, which has crept as near the Thames as it dared, and then, fearful of discovery, has fortified itself within a ring of menacing girders.

Turning to the heart of the City, we encounter the low sweep of the iron roof of Fenchurch-street, timidly fearful of its unwarrantable intrusion into the busy world. This structure is a shipping station. Its face speaks of Tilbury Docks and riverside wharves; it appears anxious regarding the times of sailings from the offices of the steamship companies in Leadenhall-street, and then, as if fearful of its own precocity, tries to hide its ugly head amid the surrounding desolation.

The terminus at Liverpool-street is not wholly unattractive despite its Gothic dress, now sadly besmirched with soot. It is customary to take our American friends to this station to point out the vastness of its site and boastfully quote data concerning the thousands of passengers who daily stand beneath the umbrageous roofs. There is something indefinably Victorian about Liverpool-street; it is so easy-going, and we have such pleasant memories of sketching tours to East Anglian villages or quiet river estuaries, as well as an adventurous tour to York by Cambridge, Ely, Peterborough, and Lincoln.

Yes, Liverpool-street is a decided improvement on the once wooden walls of old Bishopsgate, the terminus of the Eastern Counties Line.

By comparison with its feudal companion Broad-street is a demure Victorian lady. This terminus is not the head of a trunk line, despite the lofty position of the railway tracks and the ostentatious cast-iron crestings on the crude pavilion roofs. But notwithstanding it has the elements of romance, for certain London and North-Western expresses start from here on their popular run to Birmingham.

Three more stations remain to be considered. They are King's Cross, St. Pancras, and Marylebone. The first named was built by Cubitt in the middle 'fifties; it is a well-bred station, with Scottish connections. Its stern aspect stirs our interest for the distant North. Within a stone's-throw of the pavement we can see the escaping steam from the Scotch express. Even the clock turret and its Tam-o'-Shanter cap expresses the wistful look of a newly-arrived Highlander, apparently scanning first the gigantic figure of a Bloomsbury landlady and then glancing towards the heights of Pentonville, as though undecided between comparative luxury or obscure economy.

St. Pancras, across the way, is an opulent structure, recalling the ostentation of the Midlands and Lancashire. It is vast, picturesque, and romantic, for its pinnacled silhouette brings to mind the whole range of cathedrals. The plan of this station is the best in London, for it is based on a Continental model. The concourse is spacious and the approach roads have an air of directness which goes far to atone for the display of hard mediæval features. Sir Gilbert Scott designed the architectural attribute and schooled the engineers as to the shape of the steel vault. After 1870 the Gothic tradition became an obsession with the Midland Company, for the style was exploited even to Leicester; beyond this the line is dedicated to Paganism.

The railhead of the Great Central is practically unknown to Londoners, although more familiar to our cousins from Sheffield. It is a garish accretion of soulless brick and cast-iron, a hopeless example of incompetence in architectural expression. Those who make frequent pilgrimage to the Chilterns have the choice of Baker-street or Marylebone, and the spectacle of steam-drawn trains forms the greater attraction, hence the fame of the newest arrival to the metropolis. It is unlikely that the future will witness the intrusion on London's threshold of further trunk lines, and the reputation of Marylebone will rest on the fact that it was the last, as Euston was the first, of eighty years of railway achievement.

There is a human touch in the aspect of the terminals of the metropolis, for these ill-designed centres are an index to the characteristics of the people whose commercial needs called them into being. It has been declared that the spirit of romance, in its wider aspects, was banished with the coaching days, but only those without eyes to see can deny the interest attaching to modern travel.

During this hasty round of the termini, architecture akin to that of railway structures in Paris or New York has been conspicuous by its absence, but we should not forget that the energies of the Victorians were directed to strewing the country with cinders and not to designing architectural monuments of civic interest.

NOTES.

St. Paul's.

CANON ALEXANDER states that £35,000 out of the £70,000 which is required to carry out the necessary structural repairs to St. Paul's has now been collected, and that the "critical" part of the work is almost completed. The foundations have not yet been touched, and it is said that the work to be done will be carried out gradually over a long term of years The Canon added that an efficient system of fire protection for the building had now been inaugurated, so out of the evil and alarm caused by the recent air raids good has come, and they may have made the preservation of St. Paul's to posterity more certain and assured than it was before. We wish its preservation from the mistakes of decorators was equally assured, as it is in that direction that most damage may in the future arise. In the epoch in which it was erected painting and not mosaic was considered as the most suitable means of colour decoration, and we feel the instinct of its builders was the right one.

The Shakespeare Tercentenary Celebration and Shoreditch.

IT is commonly believed that Shakespeare, upon coming to London in 1586, found employment at The Theatre and the Curtain Theatre in Shoreditch. James Burbage, carpenter, and a member of the Earl of Leicester's company, had built, near the Finsbury Fields, The Theatre—the first playhouse erected in London—ten years previously. It stood in Deane's-mews, upon a site that has been identified at the west side of King John's-court, between New Inn-yard and Holywell-lane. Close by, to the south, is the site of the Curtain Theatre, wherein "Romeo and Juliet" was first performed in 1596, "Henry V." three years afterwards, and, in 1598, Ben Jonson's "Every Man in His Humour"—*teste* J. O. Halliwell-Phillipps.* The Curtain, it seems, was situated at the east end of Hewett, formerly Gloucester, street, a cul-de-sac leading eastwards out of Curtain-road, and the "Curtain-court" of Peter Chasseraw's "Survey of St. Leonard, Shoreditch, parish," made in 1745. The two sites, which will be permanently indicated with tablets in the course of the celebration of the current month, lie within the Liberty of Holywell, and in the precincts of the dissolved Priory of Holywell, but are without the verge of the City boundary, and therefore beyond the jurisdiction of the Corporation, who forbade the performance of plays within the City. In April, 1576, James Burbage took from one Giles Allen a twenty-one years' lease of houses and lands for The Theatre, upon which he expended some £650 in all. In the winter of 1598-9 his sons, Cuthbert and Richard Burbage, employed Peter Street, carpenter and builder, to dismantle the structure, and with the materials to erect the Globe, in the Liberty of the Clink, Bankside, Southwark.† We may conclude, then, that The Theatre was, and the Curtain, too, after the "wooden O" kind—that is, circular in form with an arena for the "shows"—open to the sky, and having a removable stage for the plays that could be projected into the pit. The apposite style of the Curtain was derived from the name of the ground which, as we read in the "Outlines," was called the "Curtene," lying outside the main south gate of the Priory, and is cited under that name in a lease of 1538. A "house . . . . called the 'Curtayne' [not being the playhouse], and a parcel of ground . . . called also the 'Curtayne Close,'" are specified in a deed of 1581 as "sometimes appertaining to the late Priory of Halliwell now dissolved."*

* "Outlines of the Life of Shakespeare." By J. O. Halliwell-Phillipps.

† Street also built for Henslow and Edward Alleyn the Fortune in Cripplegate Without, 1600, and after the fashion of the Globe.

The Committee on War Damage.

THE Committee on War Damage, which holds that the Government should assume responsibility for damage to private property caused by acts of war, has received the support of a large number of the municipal authorities of influential cities. The Lord Mayor of York is its President, while the Lord Mayors of Cardiff and Belfast and the Lord Provost of Perth are among its Vice-Presidents. We are not sure whether the Committee are justified in their standpoint, though we should be glad to see private individuals protected from all disasters which might arise out of the state of war. The Government has assumed responsibility for shipping losses, as it is vital for the country to maintain its imports and exports, otherwise such a step in view of its enormous cost would not be justified from the point of view of national finance. It is necessary that the private shipowner should be encouraged to risk his property, but this cannot be said to be the case with private property as a whole, and it is questionable whether the authorities would be well advised in adding to the taxpayers' burdens.

The Associazione Italiano Acquafortisti e Incisori.

AT the Galleries of the Royal Society of British Artists in Suffolk-street a most interesting exhibition of the work of the Italian Society of Engravers and Etchers is being held concurrently with that of the Royal Society of British Artists, and one-half of the proceeds of sales are devoted to the Italian Red Cross Society. No one should miss the opportunity of seeing work which is characterised as a whole by amazing freedom and force, and is devoid of any pronounced tricks of mannerism. A large proportion of the subjects treated are architectural in character, and among them are many signs that the spirit of Piranesi is yet alive in modern Italy. Among a collection of unusual merit the work of Cesaro Fratino stands out. In No. 8, "Iron and Stone," he gives us an impression of St. Peter; in No. 149 a vigorous design for a drop scene; and No. 126, "The Angel of the Cupola," all characterised by masterly drawing and dramatic force. Of quite another quality, but perfect in its way, is No. 63, "Certosa," by Chiappelli; while the "Apse of the Cathedral at Modena," No. 48, by Ubaldo Magavacca, shows yet another rendering of an architectural subject. The exhibition includes works by Sartorio, Maroni, and many who are helping to build up a great artistic era in the country which saw the birth of modern European art.

MY VIEWS OF THE "WONDER OF WORK."

BY JOSEPH PENNELL.

I SEND you, in response to your "Note" that you would like to hear more of my "views" about the "Wonder of Work," a statement of them—a statement put before the editors of *Engineering* and the *Studio* and rejected.

My work, I hope, lacks that "detail which obtains in a good photograph, such as those of similar subjects already published in our [your] pages." I hope so! What I have all my life been trying to show in my work is just this, that there is something in engineering work—the great work of our age—greater, finer, more artistic than any poor mean machine-made photograph, scale or detail drawing, can ever give. I have been, by my drawings and prints of the great works of the day—the great engineering works—trying to show that they are as fine as the temples, the churches, the palaces of the past. In fact, that the great engineers of the present are doing just the work in the same way that the great architects of the past did. The architects of the past worked for the popes, the princes who ruled the world. The engineers of the present work for the captains of industry, who own the world to-day and run it—or think they do. Art has always followed commerce, and commerce and industry rule the world—and the war—to-day. My drawings and prints were not done with any war-like idea in my head, but to show how pictorial work is.

I have seen most of the great engineering and architectural works of the modern world and most of the great temples and palaces of the past, and I know of what I speak. I know that great engineering is great art; I know that great engineers are great artists, for the greatest triumphs of engineering have been carried out in the spirit of great art and have produced great art not to be rendered by niggling photographs or scale drawings. Let me give you an example. When I was at Panama four years ago I found in the lock at Pedro Miguel a series of flying buttresses as fine as those of any cathedral, and when I asked the engineer—a civil engineer, by the way—Mr. Williamson, why he had built them in that architectural fashion, especially as they would be mostly under water, he said because they would best support the lock gates, save concrete, and break the force of the waves if a storm came on. It was just for these reasons save the latter—and the cathedral builders thought of the wind—that they built their buttresses. The trouble with you engineers is that you are great artists and don't know it, nor did the cathedral builders; but they knew their work, and so do you, only you don't know what you have done. But I do!

Take again the drawing of the interior of Vulcan Shipbuilding Yard at Hamburg in my show of "Germany at Work" at the Leicester Galleries. The lines are as fine as the lines of the interior of the roof of Peterborough Cathedral, and the same lines—but the modern architect don't know it, or most of them don't—and both are the lines of the roofs of Greek and Egyptian temples which were right from the engineering standpoint; and a modern fool of an engineer destroyed one of the temples of Egypt—or the Egyptian or British Government did! The great cranes on the Rhine and at Gary and Indiana Harbour are more beautiful than anything in modern architecture.

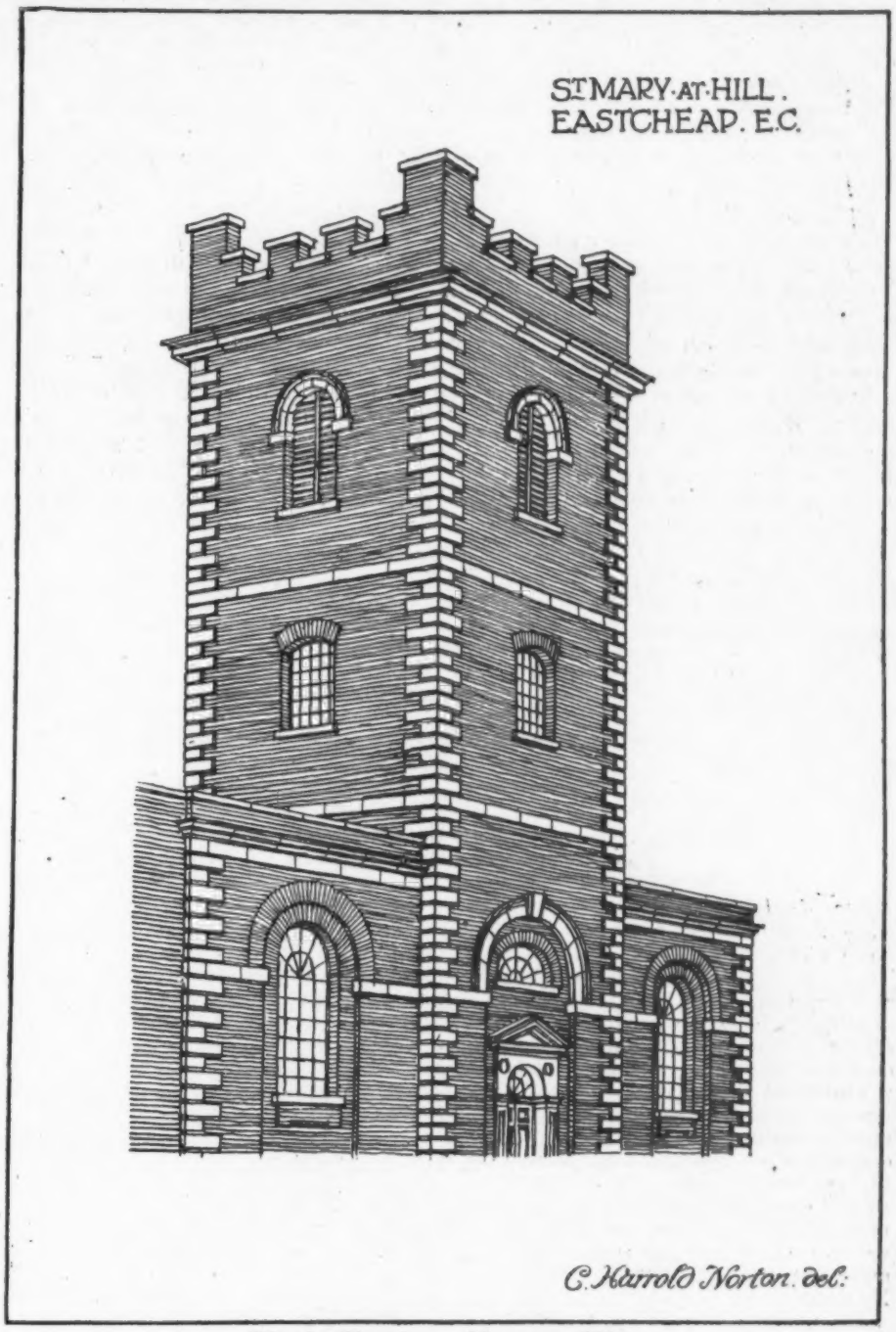
The steel works at Leeds are superb, and so are the Edgar Thompson works at Bessemer. The great Lifting Bridge at Sault Ste Marie is finer than any gateway of the past, or any gateway a modern architect has built; and the line of the new Connecting Bridge at Hell Gate, New York, when last summer it was being built, was terrifying in its power and might. I could go on for a week and show what wonderful works you engineers have made, and prove to you that you are, or were, till this damnable war broke forth, doing the great work of the world to-day—you, the authors of the "Wonder of Work," are the artists of our time, but you don't know it, can't see it, and prefer photographs and measured drawings, untrue and uninspiring. It was just the same with the cathedral builders; [you] have to get an artist to show you what you have done, and then you want photographs to prove it—lying photographs.

I salute you as great artists, the artists of our age; but in your appreciation of art, in your knowledge of what you have done artistically, you are most of you "fools and blind."

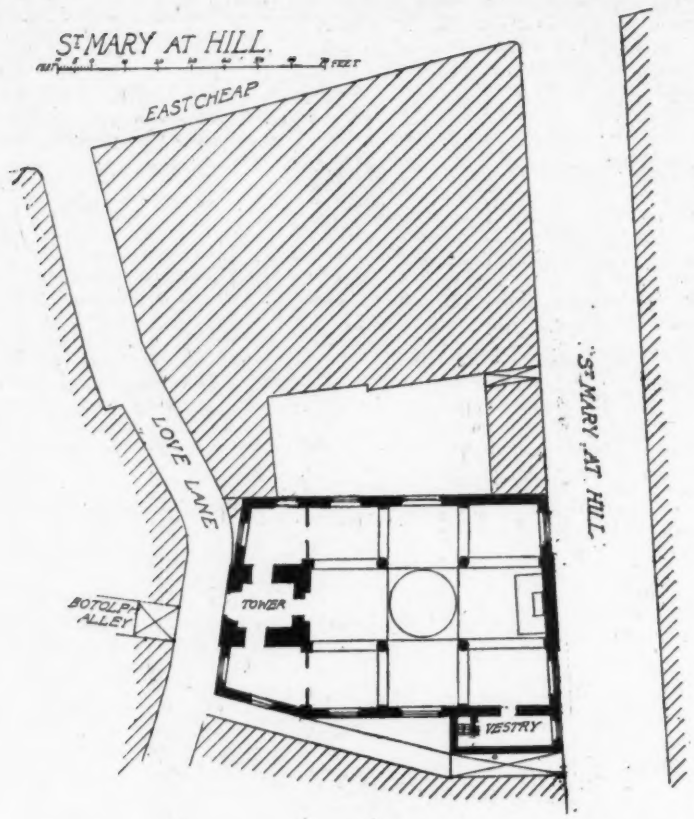
As to the drawings. It was curious and interesting to have the chance of comparing the building of the Woolworth Building with the rebuilding of the Campanile—both of which I was fortunate enough to see and draw, both the result of successful commerce. Nowhere in the world is there such an amazing vista as this down Broadway; and yet scarce anyone pays any attention to it; it has grown up with the generation; but if it was in Europe, on the Continent, the world would rave over it.

And at Genoa, the harbour to-day is only the harbour Claude drew and painted, only it is glorified and magnified; and the interior of the shipbuilding yard is but the carrying on and carrying out the traditions of great art. It is only the methods and the materials that have changed, not the form and the line—they were right from the beginning; and all great artists know they can only carry on tradition, and hope to add a mote of their time—of their own—to it.

The skyscraper is common enough in Italy. At Genoa there are streets of them; New York is but Genoa and Florence brought up to date and made useful and practical, and magnificent as well. We have—or rather American architects have—done this. It is not American art; it is great art. The only American art that I know of is the concrete, steel, and glass factory, and this idea—an American one—has been far better carried out in Germany. We must carry on in all art tradition; the trouble is that most don't



Wren's Churches. (*See page* 294.)



(Reproduced from the Ordnance Survey Plan, with the sanction of the Controller of H.M. Stationery Office.)

carry it on, they fall down before it, or fall down within it, as the various "ists" do. They consciously crib from the primitives, and give themselves away. The primitives unconsciously produced great art; we can only try to bring this great art into our own time, make it fit our needs. If we don't try to do so we are doing nothing for our age and generation, and it is all so difficult; but the artists, and, as I began by saying, engineers and architects are artists. And the great industrial works of our day are as well worth drawing as the great religious monuments of the past. They are the great art of our day, and few artists have drawn and painted them in their might and beauty. No artist that I can find has left any record of the building of the pyramids of Egypt, or the temples of Greece, or the theatres of Rome; we draw their ruins and ignore the finer subjects that are around us—at least most of us do. It is no question of letting the dead bury their dead—art will always live—and we must see the Wonder of Work which is all about us in the living present and carry on the tradition of great art.

JOSEPH PENNELL.

BURNHAM ABBEY REOPENED.

The ancient abbey at Burnham (Buckinghamshire) is being reopened for use by an Augustinian community. The "Burnham Parish Magazine" for the present month says:—"The Abbey was founded on April 18, 1266, and continued until 1539, the members of the community of Augustinian nuns quietly doing the work they had set themselves to do. On September 19 of that year the abbess and nine nuns took their sorrowful departure, and the buildings which had been given and dedicated to the glory of God "for all time" fell into ruin and became a farm. The original chapel has entirely disappeared (only the abbess's seat remaining), while the chapter house was used as a cowshed. In 1914 Mr. Bissley acquired the property and determined to restore as much of it as possible. Aided by an unusually expert technical knowledge, he has succeeded in restoring parts of the original buildings.

THE LONDON CHURCHES OF WREN AND LATER ARCHITECTS OF THE RENAISSANCE.

No. XXVIII.—St. Mary-at-Hill.

THE church of St. Mary-at-Hill abuts the street of that name and Love-lane which connect Eastcheap and Billingsgate. The church, which replaced an earlier one, was built between the years 1672-77, but the tower, which had escaped the destruction caused by the Fire, remained standing till 1780, when it was demolished and the existing one erected. The former tower is shown in an illustration in Maitland's "History of London." The church externally has little merit; the interior is among the most beautiful of any of Wren's work. The plan, like that of St. Anne and St. Agnes, is based on a square of four columns, the entablatures over which support semicircular plaster vaults, the centre being emphasised by a low dome with lantern, and the whole proportion and scale is handsomer and bolder than that of St. Anne and St. Agnes, while the woodwork is especially interesting and well designed; but the church is so dark that it cannot be well seen except by artificial light. Much of the carving was added when the church was repaired in 1848-9, but is well executed and in harmony with the structure. With the parish is united that of St. Andrew Hubbard, which church stood in Love-lane and was not rebuilt after the Fire. The advowson of St. Mary has since the time of Charles I. been in the hands of the parishioners who purchased it.

FARM LABOURERS' COTTAGES.

Mr. W. H. Gaunt, land agent, Letchworth, believes in regard to rural housing that with a reasonable price of wheat in view some problems of farm labour being unable to pay an economic rent would disappear. The Government, he thinks, should have more courage in taking risks in advancing money to any reputable building organisation for cottage property to lessen the need for tied cottages.

BOOKS.

Butterworth's Workmen's Compensation Cases. Vol. VIII. (New Series). Edited by His Honour JUDGE RUEGG, K.C., and DOUGLAS KNOCKER, barrister-at-law, assisted by EDGAR T. DALE, barrister-at-law. (London: Butterworth & Co. 1916. 12s. 6d. net.)

IT is almost amusing to remember that when the first statute relating to Workmen's Compensation was introduced in 1897 it was intended to provide a simple code of law which could easily be mastered by the class it was intended to benefit, and which was to render the intervention of the lawyer an unnecessary luxury. In practice it has proved one of the most difficult pieces of legislation to construe, and it and its successor, the Act of 1906, have been the subject of innumerable decisions by the House of Lords and the Court of Appeal. This eighth volume of the new series of these reports covers the period from October, 1914, to October, 1915, and the cases reported in the House of Lords, the Court of Appeal, the Irish Court of Appeal, and the Scotch Court of Session take up 640 pages. These reports are now of such established authority and reputation that they need no commendation at the hands of the reviewer, and therefore we confine our observations to pointing out the only innovation introduced into this volume by the editors, which is the printing in leaded type in the Outline Digest of those cases reported in this volume which they consider of chief importance.

The Housing of the Working Classes Acts, 1890–1909, and the Housing Acts, 1914. By CHARLES E. ALLAN, M.A., LL.B., barrister-at-law, assisted as to the practice by FRANCIS J. ALLAN, M.D., D.P.H. Fourth Edition. (London: Butterworth & Co.; Shaw & Sons. 1916. 12s. 6d. net.)

THE third edition of this work was issued in 1911 and is now out of print. In this fourth edition the authors have excluded the subject of town planning so as to offer a text-book on housing in a compact form. The work comprises four parts. Part 1 gives a general summary of the law; Part 2 contains the statutes with notes to each section; Part 3 gives the Acts in a consolidated form; and Part 4 contains the rules, regulations, and instructions. There are besides the tables of statutes, cases, etc., and a good index. A new feature in the work is the consolidation of the statutes in Part 3. The Housing Acts are a flagrant example of legislation by reference, and the authors in presenting the statutes in a consolidated form appear to us to have undertaken a most useful task which should be of the greatest assistance to all who have to study this subject. May we, however, suggest for a future edition that it would even enhance the value of this part of the work if in the text of the sections as consolidated some indication could be given of the exact portions culled from each statute, instead of merely a note at the foot of the sections indicating the sections incorporated?

FIFTY YEARS AGO.

Competitions.

Bolton Mechanics' Institution.—The committee have awarded the premium of £20 for the best design for the new Mechanics' Institution to No. 5, "As you like it," by Messrs. Cunliffe & Freeman, architects, of Bolton, who were the only local competitors; the second, £10, being awarded to No. 30, "Truth prevails," by Mr. W. B. Stewart, of Scarborough. Of the remaining four selected designs, "Spes" was by Mr. Wm. Hill, of Leeds; "Education," Mr. Julian Young, of Derby; "Non dubitanter," Messrs. Jeffery & Skiller, of Hastings; and a circular device, Mr. R. W. Hughes, of Preston.

[*** From the *Builder* of April 21, 1866.—ED.]

GENERAL NEWS.

Professional Announcement.

The tenancy of the chambers at No. 14, Buckingham-street, Strand, W.C., having expired, it is requested that all letters and parcels for Sir Thomas Graham Jackson, Bart., R.A., may be addressed to him till further notice at Eagle House, Wimbledon.

Professional Conduct.

The Council of the R.I.B.A. at their meeting on Monday, April 3, passed the following resolution:—"That the payment by any member or Licentiate of the R.I.B.A. of a fee or commission to any person in respect of his good offices in introducing work is unprofessional and on all grounds to be avoided." The Council have ordered this resolution to be added to the Professional Conduct Regulations, published in the R.I.B.A. *Kalendar*, page 70.

The Morgan Bronzes and Enamels.

We take the following from the *Times* of last Saturday:—"A further serious depletion of the Morgan loan collections on exhibition in the Metropolitan Museum, New York, has occurred through the acquisition from the Morgan estate by Messrs. Duveen Brothers, of New York and Paris, of the famous Renaissance bronzes, the Limoges enamels, and the majolica ware. The price paid is understood to be in the neighbourhood of £800,000. The three collections comprise about 500 specimens."

The Royal Academy.

In the House of Commons on Monday, replying to Mr. Fell, the Chancellor of the Exchequer said:—"Exhibitions of pictures, whether by a society or a private individual, will be liable to the amusements tax unless they fall within the exemption in Clause 1 (5) (*a*) of the Finance (New Duties) Bill as amended in Committee or within the further exemption contemplated in the amendment as to entertainments provided for partly educational or scientific purposes which stands on the paper in my name. I am advised that the Royal Academy exhibitions and the ordinary form of one-man exhibitions will be liable to the tax."

Architectural Association of Ireland.

Mr. H. G. Leask (President) presided at a meeting of the Architectural Association of Ireland recently, at 15, South Frederick-lane, Dublin, when Mr. C. J. M'Dowell delivered a lecture on "Celtic Art." The lecturer said, in the course of his remarks, that in no country in the world was the art of building in stone carried out to greater perfection than in Ireland. The beauty of design and decoration exhibited in the high crosses, the metal-work, and the illuminated manuscripts were unexcelled anywhere. Here it was possible to trace the progress of building in stone from the most remote and primitive beginnings, in the form of dolmens and sepulchral mounds, to the beehive cells from which the rectangular stone-roofed oratories were evolved. The outgoing officers were unanimously re-elected for the coming year.

The Royal Institute of the Architects of Ireland.

At an ordinary meeting of the Council of this Institute, held at No. 31, South Frederick-street, Dublin, recently, the President, Mr. R. Caulfeild Orpen, B.A., R.H.A., in the chair, the following resolution was passed:—"The Council of this Institute desires to place on record its sense of the great loss the profession of architecture has sustained in the death of Robert Cochrane, I.S.O., LL.D., F.S.A. For thirty-eight years he loyally supported the Institute, first as a member and afterwards as a Fellow. He was a Fellow of the Royal Institute of British Architects. A man of cultivated taste and wide sympathies, he filled with distinction the position of his Majesty's Inspector of Ancient Monuments in Ireland, a position he was specially qualified to occupy owing to his extensive knowledge as an antiquarian and his professional training as an architect. During the period of his office the work of restoration and preservation of the ancient buildings of Ireland was carried out with a sympathy and skill which his fellow-architects widely appreciated."

Proposed Purchase of Rossetti Pictures.

The trustees of the late Mr. George Rae, of Liverpool, have offered to the Committee of the National Art Collections Fund his collection of pictures by Dante Gabriel Rossetti. There are ten oil paintings and ten water-colours and drawings, nearly all of the artist's finest period.

Caxton Hall, Westminster.

Councillor Leonard Stokes submitted the proposal at the last meeting of the Westminster City Council that Caxton Hall should be sold and the proceeds invested in War Loan, but his motion was rejected by a large majority. He said that the site alone was worth £50,000, and its only "return" was a loss of £65 a year.

Architects' and Builders' Supplies, Australia.

The managing director of a firm of architects' and builders' specialists who is shortly proceeding to Australia desires to hear from one or two high-class United Kingdom manufacturers desirous of opening up business in the Commonwealth. Communications in this connection should be addressed to the Secretary, Chamber of Commerce, Liverpool.

"Concrete and Constructional Engineering."

The issue of *Concrete and Constructional Engineering* for April contains several useful articles, including:—"Concrete Work on the Copenhagen Underground Railway," by Mr. Georg Brockner; "Reinforced Concrete Warehouse, Manchester," by Mr. E. G. Souster, A.R.I.B.A.; and "Resistance of Concrete Sea Wall to Heavy Storm." The issue contains many interesting illustrations.

War Housing in the United Kingdom.

In the House of Commons a few days ago Mr. Muldoon asked the Secretary to the Treasury whether he could inform the House of the amount of money advanced by his department to urban councils or otherwise to provide housing accommodation for munition and war workers where a special necessity arose since September 1, 1914; and what amount had been expended in Ireland, England, Wales, and Scotland respectively. Mr. Montagu: "The following issues have been made by the Treasury to Government departments under the Housing (No. 2) Act, 1914—England, £824,000; Wales, *nil*; Scotland, £20,700. No issues have been made under the Housing (No. 2) Amendment Act, 1914, which extends the provisions of the above Act to Ireland. The hon. member will understand that the above figures relate to issues by the Treasury only, and not to grants made by other public departments."

Compensation for War Damage.

The Committee on War Damage, which represents 370 municipalities in all parts of the United Kingdom, met at Guildhall on Thursday last week to urge the Government in the name of 11,000,000 people to abandon the scheme of war damage insurance, and to provide out of national funds for compensation to those who suffer damage from the attacks of the enemy.

The Lord Mayor of York, who presided, said that the executive wished to avoid anything which could hamper the Government in the prosecution of the war, and would not present their memorial to Mr. Asquith until they could prove that they had public opinion at their back. They would try to convince the Government of the equity of their demands, but if they failed they did not intend to raise any discussion in Parliament till the war was over. The Mayor of Gateshead proposed and it was resolved:—

"That in the opinion of this meeting the Government scheme for insuring against loss or damage by aircraft and bombardment, which had made individual citizens responsible for war damage inflicted on them by the enemy, is manifestly unjust, and it hereby agrees to present a memorial to the Prime Minister urging the abandonment of the scheme; and (1) the adoption of an Act recognising national responsibility; or (2) reversion to the policy adopted prior to the introduction of the insurance scheme, with compensation for sufferers out of national funds, a condition of the withdrawal to be that the premiums already paid under the scheme should be returned."

Memorial to W. G. C. Gladstone.

As a memorial to Lieut. W. G. C. Gladstone, M.P., a rood in the village church of Hawarden, given by the Hon. Mrs. W. H. Gladstone and her daughters, was dedicated by the Bishop of St. Asaph on Thursday last week. The rood was designed by Mr. Gilbert Scott, and a suitable inscription is given on an alabaster tablet.

Housing the Liverpool Poor.

In connection with the clearing away of insanitary areas and rehousing the dispossessed tenants, Liverpool has completed twenty-two blocks of dwellings numbering 2,747 tenements, of which 2,193 are reserved exclusively for those people who have been dispossessed. They are, generally speaking, three stories in height, and consist of one, two, three, and four rooms, with rents ranging from 1s. 9d. to 6s. per week. There are also a number of self-contained houses of four rooms, the rents of which are 7s. per week.

Progress of Town Planning.

Since the Town Planning Act came into force and up to March 31, 1915, a period of about five years, advantage was taken, under Part II. of the Act, in England and Wales, to the following extent:—Number of local authorities who had received authority to prepare schemes, seventy-four; number of schemes for which authority to prepare had been given, 105; acreage of areas dealt with, 167,561; number of schemes made, seven; number of schemes approved, four. Subsequent to March, 1915, seventeen local authorities have received authority to prepare eighteen schemes. Besides these, it is understood that application for authority had been made, or preliminary notices served, in respect of upwards of forty other schemes.

Dante and Westminster Abbey.

Miss Troutbeck delivered a lecture on the 13th inst. before the Dante Society in the Jerusalem Chamber on "Memoirs of Dante in Westminster Abbey." The Abbey and this "Divine Comedy," she said, were linked as symbols of the national greatness of England and Italy, and it would be strange if the building and its historic significance had escaped the encyclopædic mind of the poet. There was a direct allusion to the Abbey in the "Inferno," but its special interest for Dante students lay mainly in the many tombs, monuments, and shields, recalling memorable figures appearing in Dante's pages. She called attention to many of these memorials, notably the royal tombs that recalled passages in the beautiful "Valley of the Kings," and described some of their artistic, architectural, and heraldic features. The Dean of Westminster, who presided, mentioned that in this time of stress some of the most cherished objects that she had described had been removed to places of greater safety, and striking effigies were hidden under a veil of sandbags.

Safety of St. Paul's.

A lecture on "St. Paul's Cathedral: Its History and Preservation," was delivered by Canon Alexander to members of the London Workers' Educational Association on Saturday at the Chapter House in St. Paul's-churchyard. Canon Alexander, speaking of the danger from fire, said that during the last three or four years inflammable material had been removed and hydrants carried right up to the Dome of the Cathedral. With the help of an electric pump, water could be got up to any part of the building and right over the cross. For the first time in the history of St. Paul's they were now in a position to deal adequately with an outbreak of fire. About half the sum of £70,000 which had been appealed for to make St. Paul's structurally safe was still wanted. The money was not being spent at all on the foundations—a problem which could only be taken in hand after the fabric had been strengthened. If they completed in the next few weeks work now going on at the south-west angle they would have got over one of the most dangerous parts of the building. He was afraid that before the work was finished it would be necessary partly to shore up the south transept to take off the weight from the top of the pier where it was much broken.

Leading Contents.

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ILLUSTRATIONS.

"The Wonder of Work."

OUR illustrations this week are reproductions of some of Mr. Pennell's fine lithographs, and illustrate the points raised in his article on page 293. We hope to give in future issues some of our readers' opinions on the points raised by Mr. Pennell.

CORRESPONDENCE.

After the War! A British Empire Exhibition.

SIR,—It may be rather early to speak about after the war, but it certainly is not too early to prepare for that time. Much has already been done in the way of further developing our world-wide trade and of introducing new businesses into our midst; but still more will have to be done when peace again crowns our united efforts, if we are to still further increase and retain that trade.

Then the eyes of the whole world will be turned towards England, and then will be the time to show what we can do.

For this purpose a showroom will be needed—a showroom worthy of the country, worthy of the Empire—a showroom where our products of the past and present and our aims and intentions of the future may fittingly be exhibited. In other words, an "Empire Exhibition" will be most desirable to help in this development.

The most suitable site for such an exhibition would certainly be in London, and should be ready as soon as possible after the "Great Peace" has been declared.

The exhibition buildings should be permanent, planned and designed as one whole, in conjunction with the setting-out and arranging of the grounds.

When these buildings have served their first purpose no difficulty should be found in providing other uses for them—*e.g.*, permanent Home and Empire Exhibitions; a real Peace Palace, convalescent and rest homes for our incapacitated heroes, educational and art exhibitions, etc. Never again will such an opportunity occur, and preparations should begin at once. This is a matter of such importance that it ought not to be left entirely to private enterprise, but should be national and subsidised by the Government.

Other opinions would be of interest.

Huddersfield. VOYAGEUR.

OBITUARY.

Mr. L. Ower.

Mr. Leslie Ower, senior partner of Messrs. Leslie Ower & Allan, of Dundee, architects and civil engineers, whose death we announced in our last issue (page 282 *ante*), was a member and Past-President (1897-8) of the Dundee Institute of Architecture, Science, and Art. He was elected a Fellow of the Royal Institute of British Architects in 1890, and served as member of Council. Mr. Ower practised in Dundee for a while in partnership with Mr. C. Ower; the firm was dissolved by mutual consent in November, 1899. Messrs. C. & L. Ower won the first premium with their designs out of about seventy submitted, for the Inglis Memorial Hall, with library and parish council chamber, offices, etc., Edzell, Forfar, after the Scottish sixteenth-century manner; and they were the architects of the Bannatyne Home of Rest extension, Dundee, and also of—in Dundee—enlargement and new Board-room of the Royal Exchange and Chamber of Commerce, British Linen (branch) Bank, in West Port, premises in Bank-street for the *Dundee Advertiser* and other newspapers under that management, and Pearl Life Assurance Company's offices; alterations with repairs and improvements and vestry and session-house, C.U. Church, Coupar Angus; and they made the designs for the organ, Tayport Parish Church. Mr. Leslie Ower was the architect of Park United Presbyterian Church, Dundee, for 700 sittings in the Early English style (illustrated in the *Builder*, August 13, 1898, No. XVII. of our series, "The Architecture of Our Large Provincial Towns"); Bonnethill U.F. Church, Dundee, extension and improvements; St. Luke's Parish Church, Lockel, with church hall and other additions; and Kinnaird Hall, Y.W.C.A. extension scheme, Tay-street; and the Drill Hall for the local artillery (Territorial) forces, Dundee. Mr. Ower acted as resident architect for carrying out Messrs. Swanston & Symes's designs for the Hippodrome, Dundee.

BOOKS RECEIVED.

THE CONSTRUCTION OF THE PANAMA CANAL. By William L. Sibert and John F. Stevens. (London: D. Appleton & Co. 7s. 6d. net.)

THE CHANCEL OF ENGLISH CHURCHES. By FRANCIS BOND, M.A. (London: Humphrey Milford, Oxford University Press. 7s. 6d. net.)

FINANCE ACT, 1915, FINANCE (No. 2) ACT, 1915, WITH COMPLETE NOTES. By J. E. PIPER, LL.B. (Lond.). (London: Butterworth & Co. 2s. net.)

TAXATION BY VALUATION AND THE EVILS THEREOF. By FRANK PERKS. (London: Doherty & Co. 2s. net.)

LAW REPORTS.

KING'S BENCH DIVISION.

DIVISIONAL COURT, APRIL 10.

(Before Justices ATKIN and SANKEY.)

Blunt *v.* Tonkin:

Altering a Picture Palace.

THEIR Lordships heard an appeal by Mr. H. K. Tonkin, proprietor of the Cosy Picture Palace, Somerset-place, Teignmouth, from a judgment of Judge Lush Wilson at Newton Abbot County Court in favour of Messrs. Blunt Brothers, builders and contractors, of Teignmouth, in an action they brought against Mr. Tonkin to recover a balance of account for alterations and additions to a picture palace. There was a counterclaim by Mr. Tonkin for alleged breach of contract to do the work in question in accordance with the specifications.

Mr. R. E. Dummett appeared for the appellant, Mr. F. J. Tucker representing the builders.

Mr. Dummett said the action was brought by Messrs. Blunt Brothers upon a building contract, and there was an absolute conflict of evidence in the County Court as to what were the specifications which were binding on the parties. A question of amended specifications arose, and the grounds of appeal were that his Honour did not decide the issue in this connection, and that his general finding in favour of the builders was not justified by the evidence before him. Shortly, the facts were that in May of last year Mr. Tonkin wanted some alterations and additions made to his picture palace, and asked a Mr. Sewell, a friend of his at Newton Abbot, to act as his architect. Mr. Sewell explained that he was assistant to Mr. Lloyd Downes, architect, of Newton Abbot, and Mr. Tonkin arranged the matter with that gentleman, Mr. Sewell, in fact, doing the work in question.

Mr. Justice Atkin: On what point of law are you appealing?

Mr. Dummett: That there was no evidence upon which his Honour could find as he did. We also say he did not decide the question as to what specifications bound the parties. He found that Mr. Sewell was held out by Mr. Tonkin, as his agent, to enter into contracts, and based his decision on that. My submission is that there was no evidence upon which the Judge could find that Mr. Tonkin held out Mr. Sewell as his agent, and no evidence that he was the agent in the sense that he was the architect.

Without calling upon counsel for the respondents, their Lordships dismissed the appeal, with costs. Mr. Justice Atkin said the view of the County Court was quite justified by the evidence, and Mr. Justice Sankey concurred.

Important to Painters and Decorators.

IN the Shoreditch County Court on Tuesday, April 11, before his Honour Judge Graham, K.C., a case of some interest to painters and decorators was heard, in which Jas. Hy. Gavin, of 60B, Wilson-street, Finsbury, a painter, builder, and decorator, sued Mrs. E. Phillips, of 86, Seymour-road, Harringay, to recover £2 14s. 6d. for decorating and repairing work done. A sum of 25s. had been paid into Court as sufficient to pay for all the plaintiff was alleged to have been asked to do. The plaintiff's case was that he was asked to attend to the roof of a house belonging to the defendant. He took the top off, and then made everything secure, clean, and tidy. He could have continued right on and finished the job of repairing the roof and doing the necessary painting work to finish off without giving any estimate at all, as he was given a free hand. As a matter of fact, however, he waited for specific instructions from the lady as to what she wanted done.

The defendant said plaintiff had far exceeded his orders, which were to take the roof off and prepare it for examination by builders for its repair, so that they might give an estimate. She always had an estimate given for anything that had to be done. He had gone on with the work as if he had been given the order right out.

Judge Cluer said the point in the case seemed to be that the plaintiff had done more than a builder should have done under the circumstances.

The plaintiff said it was not so, as after taking the roof off he had to make it weather-proof, and then tidied things up and made things secure, otherwise it even went so far as being a risk to life.

Judge Cluer: You say you do not think plaintiff was justified in making things secure against the risk of something falling and killing anyone, or in making it clean for the time being?

Defendant: I do not think he ought to have done more than he was ordered to do—take the roof off—before there had been an estimate prepared.

Judge Cluer said he noticed that was what the lady wrote in June, as the work had been done in May, which seemed a bit late.

The defendant insisted plaintiff had no right to have done it.

Judge Cluer: But surely a man is entitled to make things secure as against a possible accident and death? What would you have said to him had such a thing occurred and he had not done it?

Defendant: I wanted to get an estimate from another builder, and he had no right to go on before I had got it.

The plaintiff said his verbal order was that he had been recommended to her, and that she left it in his hands to do the right thing. He did not wish to take a liberty in the matter, or otherwise he considered he could have gone right on with the job.

Mr Chas. Batee, the tenant of the house, said, in view of what had occurred, he was sorry to say he recommended plaintiff. Mrs. Phillips distinctly said that, in view of the recommendation, he was to do what was necessary.

Judge Cluer said he considered the plaintiff had acted quite reasonably, as the defendant would doubtless have "sung a different song" had anything have occurred because he had not done so. There would be judgment for the plaintiff for the full amount claimed and costs.

NATIONAL HOUSING AND TOWN PLANNING CONGRESS.

NATIONAL HOUSING AND TOWN PLANNING COUNCIL:

Housing Problems After the War.

THE Congress convened by the National Housing and Town Planning Council continued its proceedings at Caxton Hall, Westminster, on Wednesday, Thursday, and Friday of last week. On Wednesday further consideration was given to the resolution moved by Mr. Shawcross (Chairman) with reference to obtaining a grant of money from the Government for housing purposes. The resolution before the meeting was:—"That this Congress urges the Government to re-enact the Housing No. 2 Act (1914) to be placed in operation at the end of the war, and to increase the amount provided under the Act to £20,000,000." Several amendments were moved to this, and as the result of consultation the following was put before the meeting:—

"That this Congress urgently directs the attention of the Government to the critical need for the provision of additional housing for the working classes, and that, in respect of the national interest and responsibility in the matter, urges upon the Government to set aside not less than £20,000,000 to make such advances to local authorities as will enable them to provide houses at reasonable rentals, having regard to all necessary and equitable circumstances and conditions."

The amendment was carried by 117 votes to ninety-six, and was then further amended by the insertion of the words "and other agencies" after the words "advances to local authorities."

The Congress continued its discussion from the previous day on the general question of house shortage, and Mr. Councillor Myers (Dewsbury) moved:—"That in view of the results produced by the system of providing housing for the working classes hitherto prevailing, this Congress requests the Government to take such steps, either on local or national lines, as will stimulate the activities of local authorities and other agencies in the erection of the houses which are necessary."

Mr. Cheverton-Brown (Federation of House Property Owners), in seconding the amendment, said they recognised there was a shortage of 600,000 houses to-day, and there was a continual shortage of 100,000 a year. Although President of a much-maligned body, he had never held with the working classes being provided with other than good houses; but they had been saddled with the sins of those who built houses a hundred years ago, and who, he supposed, built them according to the requirements then demanded. They could not get the houses required unless they co-operated together and unless local authorities, utility societies, and private enterprise all sought to provide houses. Speaking with practical knowledge, he said the first thing to do was to restore confidence in the financial market. If they could show people that in investing in bricks and mortar they would once again be investing in a sound national security, there would once again be no difficulty in getting the money.

Mr. S. Smethurst (National Federation of Building Trades Employers), speaking on behalf of the Housing Reform Association, said that Association stood for a sufficient and proper class of house, and they did not care who provided them. If they were going to pass resolutions of an extreme nature from any of the divergent points of view they would simply wreck the whole thing. A circular had been issued to the builders of the country asking them to assist in the movement for better housing.

The resolution was agreed to.

Suggested New Housing Policy.

The Chairman initiated a discussion on a new housing policy by explaining a Memorandum he had prepared. The speaker dealt with the methods adopted in the past for providing working-class houses, and made a number of suggestions for the future. One method was for local authorities to form co-partnership schemes with tenants. He also thought local authorities should have power to lend money to public utility societies for housing, as was now done by the Public Works Loan Commissioners at ¼ per cent. more interest than they had to pay. In such cases the local authority should have power to insist on a certain quality of materials being used, on a good standard of workmanship, and on good design. He further advocated local authorities having power to advance money to builders for the erection of working-class houses on the following conditions:—"(1) The houses shall be built upon land owned by the local authority, and shall be let at a ground rent covering the cost of the land and development charges for a period of eighty years, and including sinking fund charges. The land to be laid out on town-planning lines. If at the end of this period the houses are still in good repair and fit for habitation, the owner shall have the right to lease them for a further period. It is suggested that this should be no more than twenty years at a rent based on the then price of the land. (2) The local authority should be allowed to advance 80 per cent. of the value of the house or houses as certified by their surveyor or a responsible architect, whichever is preferred by the local authority. The rate of interest charged to be ¼ per cent. more than the rate the local authority pay to the Treasury or can borrow at themselves. (3) Loans to be repaid in not more than forty years by annual repayments for interest and sinking funds. (4) Houses to be built according to by-laws approved by the Local Government Board. (5) Designs to be approved by the local authority, as also the materials to be used—a good standard of workmanship to be insisted upon. (6) Stipulations to be made as to repairs being properly executed, and in case these are neglected local authorities to have power to do the same and charge to owner. The sanction of the Local Government Board to be obtained before any agreement to lend money is entered into by the local authority, as also their approval of the designs of the houses and the lay-out of the plots."

Mr. R. W. Willan (Manchester), speaking as a builder who had risen from the ranks, as had most builders in Manchester, he said, pointed out that the housing problem was purely an economic one. At the present day builders and local authorities, too, were in the hands of monopolies and trusts, and he instanced cement, which had risen 100 per cent. in price. If only the Labour leaders would meet practical builders and talk over the practical difficulties of the situation he was certain they would be able to come to an understanding.

In subsequent discussion doubt was expressed by several speakers as to whether builders would lease from local authorities and so lose their profit on the land.

No resolution was proposed.

Housing in the Mining Districts.

Dr. T. E. Hill (County Medical Officer for Durham) introduced the subject of the "Future of Housing in Mining Districts." He said the matter was not so much an economic one, because, generally speaking, the miners received a fair wage, and under normal conditions the majority were capable of paying an economic rent, and where there had been housing schemes they had shown their willingness to pay a fair rent. Miners required a large living-room, and many of the plans which had been prepared for housing schemes would not be favoured by them, as the kitchen was too small. He believed the lamentable conditions as to housing now prevailing in the Northern districts was due to the system of "free houses." When, instead of providing the house, the colliery company paid the miner an allowance, he wanted to get a house at a rent which would be covered by the allowance, and with the increased cost of building this was not possible unless he took a house with little or no conveniences. He suggested the provision of working-class houses by the local authorities, any deficiency to be met out of the rates, assisted by Government grants; the adoption of town-planning schemes in mining districts in course of development; power to the local authorities to obtain land at reasonable cost; prohibition of the erection of flats or tenement dwellings, and no dwelling to contain less than three rooms; a minimum floor space in every room; the provision of a bathroom and water-closet; the erection of lodging-houses for single men to prevent the overcrowding of dwellings.

Mr. T. H. Cann (Secretary, Durham Miners' Association) expressed the opinion that the statement on the conditions by Dr. Hill would have a great effect in the Durham mining district.

The discussion generally turned on the system of free houses, which Mr. Hogg (Northumberland Miners' Association) thought the miners would be very loath to give up, as it was an ancient privilege they clung to.

Mr. Myers (Dewsbury) hoped the experiments in the building of colliery villages in Yorkshire would not be followed, and said he noticed at the model village of Maltby one of the houses erected six years ago had fallen in, whilst the village was as congested as many an industrial area.

No resolution was moved on the subject.

Housing of the Poorest.

Mr. H. R. Aldridge (Secretary, National Housing and Town Planning Council) submitted a Memorandum on "New Developments in a National Policy in Regard to Slum Destruction, the Suppression of Overcrowding, and the Housing of the Poorest." He said the suggestions he made were admittedly drastic, but after witnessing year after year the condemnation of the slum property, which still survived, he had come to the conclusion that they needed to be scientific and to cut away remorselessly. He suggested that all those who let houses for habitation by the working classes should be required to apply to the local authority for a certificate, renewable every three years, certifying that the house was in all respects reasonably fit for habitation. At the end of five years no house in regard to which such a certificate was not possessed by the owner should be inhabited. Also a local authority should be forbidden by Act of Parliament to permit the occupation of a dwelling with an average of more than two persons to one room, or, alternatively, the occupation of any room as a sleeping-room with a less provision than 400 cubic ft. of air space per adult. He proposed the following resolution:—

"This Congress urges all parties in the State to take combined action to secure that every family shall be housed under proper conditions, and that in order to secure this end, which is of vital and national importance, legislation should be introduced—(*a*) To set up machinery in all industries to require employers to pay wages sufficient to ensure decent housing accommodation for the workers in these industries; and (*b*) to secure that where such raising of wages can only be achieved by stages the local authority shall recognise and fulfil the duty of providing decent housing accommodation for the poorest, and that the whole country shall bear the difference in the cost between the rent of the decent dwelling and the rent which the tenants can afford to pay."

Mr. B. S. Rowntree seconded the resolution, and said in connection with such a matter it was impossible to ignore the problem of the low wage. He advocated the setting up of Trades Boards to fix minimum wages in all trades.

Mr. Pearse (Nottingham) moved as a rider :—"That, in the opinion of this Congress, housing schemes promoted by public authorities, save in the case of schemes intended for housing the poorest, should be economically self-supporting."

Mr. McKellan (House Builders' Association, Manchester) seconded the rider, and described the manner in which the builder was taxed, and, he added, "then you call a conference in London and call him nasty names."

Several amendments were handed in, and eventually both the resolution and the rider were carried with the substitution in each case of the words "those unable meanwhile to pay an economic rent" for the words "the poorest."

Insanitary Rural Property.

Dr. W. G. Savage (County Medical Officer of Health, Somerset), in discussing the question of insanitary houses in rural areas, said the co-operative societies looked at the problem of rural housing and passed it by, and private enterprise did the same. He did not care whether it was the State, the municipality, or private enterprise which provided the dwellings so long as they were provided. If financial aid from the State was forthcoming to an extent which would transform the scarcely-veiled antagonism of the Rural District Councils in regard to building schemes into active and willing co-operation it should go far not only to solve the housing shortage, but the existing difficulties in the way of dealing with insanitary property.

Sir R. Winfrey, M.P., considered the Rural District Councils might be subsidised with regard to housing for a period of ten years, after which the position might be again reviewed. If the local authorities would only build ten or twenty small cottages to be inhabited by the aged inhabitants of villages, who now often occupied larger dwellings, it would go far to solve the difficulty. The experience of some half-a-dozen Rural Councils in Norfolk who had carried out housing schemes showed that it was possible to do so and let them at an economic rent.

Miss Cochrane suggested that the State should provide houses for the Old Age Pensioners, and also that Rural Councils might have the opportunity of buying the timber now being used for huts by the military at a cheap rate, to be employed in the erection of cottages.

Work of Public Utility Societies.

Mr. E. G. Culpin described the work of public utility societies, and contended that it was by means of such societies that the housing problem could best be solved. There were some sixty societies actually at work building houses, whilst sixty or seventy others had been formed with the view of getting to work at the close of the war. The great landowners of the country were showing their interest in the matter, and Lord Crewe, Lord Salisbury, and others were developing their land on these lines. The total area being developed by the societies was 1,600 acres, and about £5,000,000 was engaged to be spent on the development of land in this way. He believed this would become the most important agency for housing that they had.

Preparation of Schemes.

Arising out of a motion that the resolutions passed by the Congress should be submitted by a deputation, Mr. H. Gilbert Whyatt (Borough Engineer, Grimsby) pointed out that the deputation should make it known that the Local Government Board discouraged the preparation of schemes. If a local authority sent up a scheme it was told it had better stand over until after the war.

Mr. Aldridge said it was true that the Local Government Board would grant no loans, but he had it from the Chief of the Town-Planning Department that they were eager that local authorities should prepare schemes so that they might be proceeded with at as early a date as possible.

The Future Village.

Professor S. D. Adshead, F.R.I.B.A., taking part in a discussion on the needs of the agriculturists, said that until they got a national Road Act they would never get their communities properly connected together. They wanted a Road Board with power to plan future roads, and once having got that they could proceed to deal with the villages and open up agricultural areas which at present had no connection with suitable markets. With regard to the kind of village they would like in the future he depended very much upon public utility societies. A five-roomed cottage would necessarily have to be the standard in the future for the family, but there was still room for smaller cottages for the aged and for young married couples. Little had been said at the Congress as to the cost of building, but so far he considered they had been building with too much material and too little brains. He felt there were yet many ways in which such cottages could be produced more economically than they were producing them now, and a great deal could be done by a modification of some of the present unreasonable by-laws in rural areas. Dealing with the building up of village life in the future, the speaker described such a new community to be erected after the experimental stage was passed. He said they might suppose the site to be five miles from a railway-station and two miles from the main road, to which it was connected by a 16-ft. newly-constructed asphalt path. The land acquired might be 4,000 acres suitable for mixed farming. The 4,000 acres would be mapped out roughly into fifty or 100 farm lots, and a certain number would be again divided into 5-acre plots for intensive culture. Farm buildings and a cottage would stand on each farm, grouped around a farmyard, and the village would in its principal features be very much like what was seen to-day. There would be a church and a chapel, a public-house, a general store, a butcher's shop, a smithy, and a post-office. The difference would be seen in the result of a co-operative system that, interwoven in the social fabric of the community, had created an independence of spirit, creative ability, an interest in life, and a capacity for overcoming difficulties of organisation previously unknown. All the farm buildings and the cottages would be designed so as to incorporate in their construction standard details—doors, windows, staircases, gates, railings, etc.—which, after the most careful consideration, would be manufactured in thousands in accordance with approved designs. The materials of which the solid walls were constructed would depend upon the possibilities of the district. Where there was plenty of gravel the construction would be of concrete. In a brick district it might be cheapest to build in brick, or with a combination of brick and concrete reinforced, and in many cases buildings might be framed in steel and roofed with asbestone, permanite roofing, or wood. Small buildings constructed of almost any material would prove satisfactory, provided they stood on a concrete slab. The great feature of the cottage would be the kitchen, which would measure at least 22 ft. by 15 ft. A bath would have to be provided, perhaps of the tip-up pattern, and it could be placed in a recess or under the stairs. On clay soils the floors would be of concrete covered with linoleum, and on sandy or gravel soils the concrete would be omitted and the floors would perhaps be of wood. If the bricks were good, a 4½-in. brick or a 3-in. concrete outside wall would be perfectly satisfactory, always providing there was an inner lining to prevent damp. The inner lining could consist of coke breeze concrete slabs about an inch in thickness, leaving an air space of ½ in., and stuck to the outside wall with bits of slate and cement. Such slabs, manufactured in immense quantities and used in such a way, would make cottage building 25 per cent. cheaper. The three upper rooms would be partly in the roof and flat dormers would be bought ready-made from stock.

Homes of Married Men.

A great deal of discussion took place on the questions of the preservation of the homes of married men called to the colours and also as to finding employment for wounded men returning to civil life.

Mr. Pearse (Nottingham) protested against the attitude adopted by officials in Labour Exchanges in dealing with the applications of such men. He also considered that the making of provision for men returning from the Army and also the growing difficulty of getting domestic servants would lead to a remodelling of garden-city schemes. They would require to erect buildings more in the nature of hotels, with one common room for meals.

Mr. Smith (Hull Master Builders' Association) said the rent of the houses occupied by men called to the colours must be paid by somebody, and they wanted the Government to say definitely that they would pay it. Many property-owners were men of small capital, and already they were refusing to let houses to men of military age.

The following resolution was passed on the motion of Mr. D. Rider (War Rents League), seconded by Mr. Whybrew (Workmen's National Housing Council) :—"That this Congress is of opinion that the only equitable way of preserving the homes of men called to the Navy and Army is by the Government making the necessary provision out of national revenue."

In respect to the further discussion on the employment of disabled men, the following resolution, proposed by Alderman Trounson (Southport) and seconded by Mr. Pearse (Nottingham), was carried :—"That this Congress is of opinion that a national organisation, working through committees, appointed by the local authorities, should be formed to find suitable employment for disabled soldiers and sailors who, when trained for employment and efficient, should receive the full current rate of wages paid in their occupation, independent of any pension they may have."

Land Settlements for Soldiers.

Mr. E. G. Culpin brought up the subject of the scheme prepared by the committee appointed by the Government with regard to settling disabled sailors and soldiers on the land, and said that in it they had the nucleus of the most complete revolution the country had ever witnessed. It contained the germs of what might lead to the entire reconstruction of rural life in the country. What they must aim at in the establishment of the proposed colonies was the revival of peasant art. He hoped, however, that the plan attached to the committee's report showing the arrangement and grouping of the new villages would not be approved, because to take two miles of road and dot cottages along it was not the way to make a community. Whilst he had always been opposed to some of the by-laws of rural districts, he thought there was danger in the proposal to exempt buildings erected under the Small Holdings Act from the by-laws, because if they did that the farmer who wanted to build a cottage would also want to be exempt. It was also proposed that the War Office should hand over to the Board of Agriculture the disused hutments for conversion into buildings for small holdings. That would not be an attractive picture for returning soldiers. They had no objection to wooden houses, but they did not want disease-carrying timber utilised for providing homes for soldiers.

No resolution was moved on the matter.

Town-Planning Schemes.

Mr. George Cadbury (Birmingham) described the town-planning schemes of his Council, and particularly the South Birmingham scheme, which is now in course of development. He paid particular attention to the question of roads, and said that in the case of the six main radial roads along which trams ran or were projected, and a section of the wing road, it was hoped the width would be 120 ft. It was proposed to put the service pipes under the footway, and this they considered a most important development, because as roads were now constructed it did not pay to break them up. As regarded town planning generally, he hoped that a maximum of twelve houses to the acre would be the standard for the future.

The Bishop of Wakefield made a spirited appeal to all present to forward town planning in every way possible. He referred to the apparent failure of the efforts made by enlightened residents to plan the great Doncaster coalfield on town-planning lines. That district might have been made a veritable Garden of Eden, but whether it was possible to save anything from the wreck now he did not know. Another Yorkshire problem was arising at Huddersfield. The Corporation had

a general scheme in preparation before the war commenced, but now they were faced with a new condition of affairs. The Dye Company, formed to make the dyes formerly supplied by Germany, was erecting works which, when completed in the near future, would employ thousands of men. These men would have to be housed, and, being skilled workers, he took it they would be well paid, so that here was a chance of erecting houses of a good type. Unless, however, some good town-planning scheme was thought out at once and agreed upon the sudden emergency might find them unprepared.

Mr. F. M. Elgood (Ruislip-Northwood) urged that the staff at present engaged in civic survey might have their attention called to some of the pressing and practical features connected with certain town-planning schemes which were temporarily suspended merely for lack of means and men to carry them a stage further. There was not the slightest obstruction on the part of the Local Government Board to the preparation of schemes. Without attempting to legislate generally upon details of development which created differences and might often require considerable time for adjustment, local authorities at the present time might consider the propriety of confining their schemes to the following points:—1. Laying down the lines of main routes of communication. 2. Provision of open spaces and reservation of places of interest and view-points. 3. The preservation of the banks of watercourses and rivers. 4. The limitation of the number of houses to be built in particular areas. 5. The careful provision of building lines on existing and new roads. 6. The restriction of factories and certain other buildings to particular areas.

Mr. Ross Young (Town-Planning Engineer, Lanarkshire) expressed the view that it was necessary to get legislation which would permit them to carry out main roads, although the whole of their scheme had not been considered.

Councillor Pemberton (Warrington) said that with the present shortage of houses the country would be faced with a grave problem at the close of the war. Owing to the stagnation of the building trade many skilled workers emigrated before the war, and many had since gone to the front. They were 2,000 houses short in Warrington. He thought town planning should be made compulsory.

Mr. Alwyn Lloyd (Welsh Town Planning and Housing Trust) urged the necessity of regional planning.

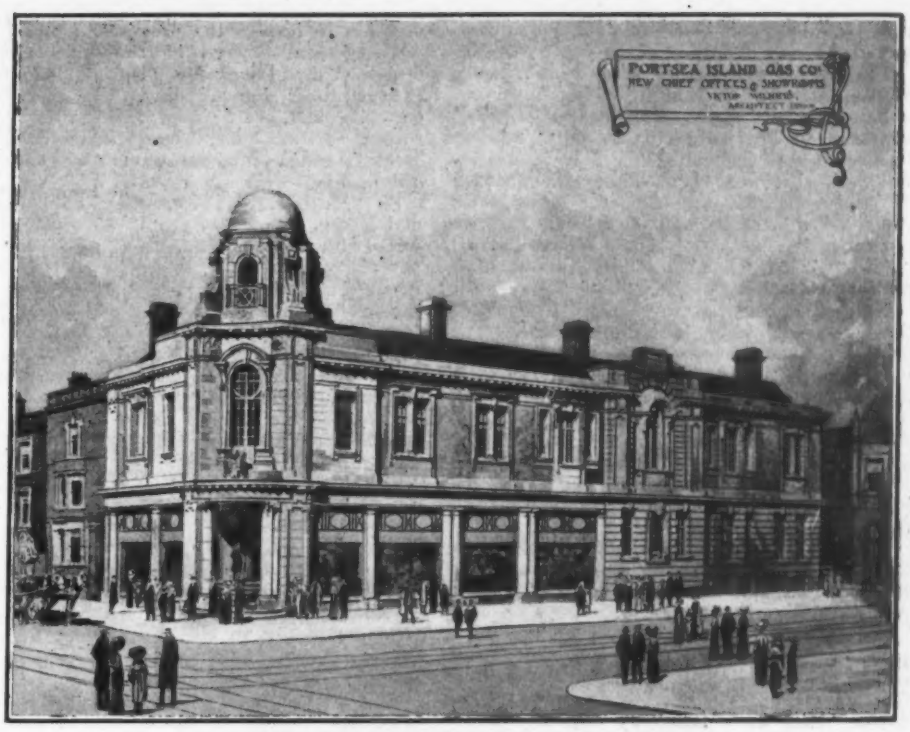
After further discussion, the following motion, proposed by Mr. Harrison Barrow (Birmingham), was carried:—

"That this Congress, recognising the need for having ready building and other schemes to afford employment at the end of the war, and also the great need for the further provision of houses for the working classes, which can only be met by municipal enterprise, where other agencies fail, and recognising further the advantages in building such houses in connection with town-planning schemes, urges upon all local authorities throughout the country the supreme importance of preparing housing schemes at once where there is a lack of suitable accommodation and of taking the necessary steps to promote and press forward town-planning schemes in their area."

Cheap Building Materials.

A Memorandum by Mr. H. L. Patterson, F.R.I.B.A. (Sheffield), was submitted on "The Possibility of Adopting New and Cheap Building Materials and Securing Economy in the Design of Cottages, provided that the Essential Standards of good Building Construction and of Wholesome Environment of Dwellings are not Impaired." The author dealt with the type of cottages generally designed in the past, and in regard to the cottage of the future said they must try to get away from the worst features with as little extra cost as possible. This was by no means easy, and the smaller the type of cottage the greater was the difficulty. He advocated the provision of three bedrooms even in the smallest cottage, and the abolition, where possible, of back additions. As far as possible there should be no essential difference in the treatment of the back and front. For nine-tenths of the cottages in towns brick was and must remain the usual building material. An economy would be a modification of some of the rural by-laws as to the height of rooms. A 9-in. by 9-in. flue was ample except for the kitchen range. In walls of the dimensions of 9 in. of a height of 16 ft. or 18 ft. it might be permitted that they should go down to a concrete bed without off-sets at all. Pure bitumen sheeting was the best and cheapest material to use for damp-courses. In many by-laws the sizes of timber stipulated were needlessly large. If cheapness was desired there was no need to plaster scullery and pantry walls, but they could be pointed and whitewashed. The author discussed some of the newer methods of construction, and said it was quite possible that, used on a large scale, some of them might be more economical than the old; but a comparison of tenders actually received tended to show that for a small number of houses at least the ordinary methods to which workmen were accustomed were still the cheapest.

Time did not allow of the discussion of the subject.



Offices, Portsea Island Gas Company.

Mr. V. Wilkins, Architect.

NEW CHIEF OFFICES AND SHOWROOMS, PORTSEA ISLAND GAS COMPANY.

THIS building is situated in a prominent corner position on the site of the former offices of the company in the Town Hall Square at Portsmouth. The elevation is in Portland stone, and Welsh green slates are used for the roof. The basement is devoted to showrooms for gas cooking stoves, general stores, and strong-rooms. There are also rooms for the ventilating, heating, and the high-pressure gas plant. Further, there is a large cycle store, approached from the outside by a slope adjoining the staff entrance, where accommodation is provided for the bicycles belonging to the outdoor staff. The ground floor is divided into showrooms and general offices. The main entrance is approached through a circular porch on the corner.

Model rooms have been designed to exhibit the various gas appliances. All the screens, enclosures, fittings, and desks are carried out in mahogany, and the artificial lighting of the general offices is on the semi-indirect system. Situated at the rear of the general office is the staff entrance and cycle slope to basement.

The main staircase out of the showroom leads to a large square hall on the first floor. On this floor is a demonstration hall for lectures, Board-room, directors' rooms, and rooms for the general manager, secretary, and their staff. The Board-room is panelled throughout in mahogany.

The back part of the first floor, which is served by a separate staircase from the staff entrance, is planned to accommodate the automatic collectors' staff and additional offices and main staff lavatories. The caretaker's quarters are situated on the second floor.

Messrs. Sabey & Son were the general contractors. Mr. Victor Wilkins, of York-buildings, Adelphi, is the architect.

DANGEROUS STRUCTURES.

AT a meeting of the Concrete Institute on March 15 Mr. W. G. Perkins, District Surveyor for Holborn, read an interesting and useful paper entitled "Some Examples of Dangerous Structures," in the course of which he said:—

"Amongst the causes of a dangerous structure are the following:—

(*a*) Faulty construction.
(*b*) Faulty materials.
(*c*) Faulty design.
(*d*) Decay and fatigue.
(*e*) Overloading.
(*f*) Removal of extraneous support.
(*g*) Wind pressure, shock, etc.
(*h*) Fire and explosion, bombs.

I propose to enumerate a number of cases where failures have resulted from one or more of these causes; generally speaking, several occur at the same time, particularly (*a*), (*b*), and (*c*).

Perhaps few of us have had any experience with failures arising from faulty design and materials in modern structures, as a sufficient period has not elapsed for time to have done its work, but there are numerous instances in buildings erected by former generations.

We moderns are often called to account for the supposed inferior manner in which we build, being told that our buildings are not solid like those erected in "the good old times," that we have lost the art of making good mortar, etc. People who make such remarks have, I fear, only an acquaintance with the jerry-builder of the very bad type. The majority of buildings erected in London 100 to 200 years ago were constructed in a most inferior manner. The mortar appears to have been compounded with a fat lime, dry slaked, and, judging from the nodules of loam it contains, mixed with a good deal of the "top spit" of the field. Naturally

such stuff has, and had, no binding qualities, and to this day is only so much dusty rubbish.

The bricks were badly shaped and easily broken, so much so that in taking down old walls one finds course after course of what appeared to be headers to be only "bats." This resulted in the walls being built in a series of "half-brick" or 4½-in. skins, which sooner or later separated and bulged. If carefully examined it will be seen that many of the bricks which at first sight appear to be "headers" are too wide and really consist of portions of stretchers—*i.e.*, "bats."

Generally speaking, this bulging occurs in the basement story immediately below the level where the thickness of the wall diminishes by means of a "set-off" from one thickness to another, say 1 ft. 10½ in. to 18 in.

Sometimes large portions of brickwork roughly triangular in elevation and wedge-shaped in section burst from the walls, and when this is the case no time should be lost in needling the walls well above the point where the failure shows itself.

In many old buildings the main beams of the floors are placed diagonally, and the loads from the roof and four stories are imposed upon a pier of brickwork about 14 in. square.

Several cases I have dealt with have been party walls built with the bricks and mortar before described, about 50 ft. in height from the basement floor line to halfway up the gable. They have failed by crushing in the basement, although the load consisted of only their own weight and that of the dwelling-room floors and furniture on them. The floors have been divided into bays by beams spaced 10 ft. or 11 ft. apart. With 40 ft. in height of 14-in. work and 10 ft. of 18-in. work the weight per square foot at basement floor level from the wall itself would be per foot-run :—

40 ft. × 1 ft. 2 in. = 46⅔ cubic ft.
10 ft. × 1 ft. 6 in. = 15 „

61⅔ cubic ft.

which at 112 lb. per cubic ft. = 6,867 lb. The weight of the joist and boarded floors would be 12 lb. to 15 lb. per square foot, so that we should have per foot-run of wall 4 ft. × 10 ft. × 1 ft. × 15 lb. = 600 lb.

The superimposed load on the floors cannot be stated with anything like accuracy, as it varies with the affluence of the tenant (I am speaking of dwelling-houses), but let us suppose it is as much as 56 lb. per square foot. As the roofs were very steep and covered with thick tiles which absorbed a large amount of water, and which were pointed and bedded in mortar in many cases, let us assume they also weighed 56 lb. per square foot of covered area.

This will give us per foot-run of wall four floors and one roof = 5 ft. × 10 ft. × 1 ft. × 56 lb. = 2,800 lb. Total load per foot-run, 6,867 + 600 + 2,800 = 10,267 lb.

The lower part of the wall being 18 in. thick, this gives us a pressure of $\frac{10267}{1.5} = $ say, 6,845 lb., or a trifle over 3 tons per square foot as the ultimate load.

If 56 lb. per square foot superload on the floors is too high, then the walls have failed under a pressure of less than 3 tons per square foot. It must be remembered, however, that these walls have been standing some 200 years, and therefore the failure may be due partly to fatigue. Strangely enough, this kind of brickwork is always stronger in damp positions, the moisture having enabled the lime to a certain extent to set. Workmen refer to this state as being "waterbound."

Again, I have found a wall of this period built with two skins of brickwork, 4½ in. thick, "tied" together with wooden laths at intervals of about 18 in. in height, the space between being filled with small pieces of brick and stone.

A form of construction frequently found is a shell of 4½-in. brickwork around a stout timber post. You see the brickwork bulging and wonder why a stout-looking pier, perhaps 2½ bricks square and 8 ft. in height, should be failing under a comparatively light load. The explanation is that the timber post has decayed at its lower end and the thin shell of brickwork is unable to carry the superstructure.

A very interesting case of this kind was a building near Queen-square, Holborn. Having occasion to inspect the premises, I found the walls generally were of the kind already described and that the piers of the front external wall were yielding. The piers were cut into and, as I suspected, timber posts, rotten at the ends, were disclosed. These posts extended up to the second floor, and were quite sound in the upper parts.

Sir Francis Fox was consulted by the owners, and it was decided to grout the whole of the walls with Portland cement. Numerous small holes were cut in the interior faces just large enough to insert the nozzle of the grouting-machine. After well soaking and washing the interior of the wall with clean water under pressure from the machine, Portland cement grout was pumped in, and as it appeared at the joints and cracks it was dammed with clay stuck upon the faces of the walls by workmen watching for its appearance.

The whole of the walls were treated in this way with success. Prior to the grouting they sounded hollow, but they now sound and have every appearance of being solid. After the grouting the wooden posts were cut out of the piers and substituted by brickwork in cement.

Modern brickwork is not without its faults, due principally to the lax manner in which it is supervised and an imperfect knowledge on the part of the specification writer. He will, for instance, require that four courses shall not exceed 12 in. in height, and then select bricks that are very little less than 3 in. in thickness. The consequence is that the bricklayer, to keep to the specification, will put an insufficient bed of mortar in laying the bricks. I have had as much as 3 ft. of glazed brickwork at a time taken down because there was absolutely no mortar in any of the beds. And this was on a first-class job, under architects and a clerk of works. Again, when the bricks have a frog, that frog should be upwards when the brick is laid, otherwise the brick beds only on the rim and its bearing area is reduced by one-third. When the bricks have two frogs one should be "buttered" or filled in before laying.

Unless strictly supervised the vertical joints are never filled solid. Some mortar is rubbed over the top of the course with the flat of the trowel, which may enter the joints some ¾ in. Particularly is this the case with Staffordshire blue bricks, which are certainly difficult to make solid work with, as, using the workman's expression, they "swim all over the place."

To ensure solid work the beds should be thickly spread and the bricks pressed down into it, frogs up, and the whole course grouted up by heaping mortar on the wall and softening it with water from a "gauge-pot" so that it becomes soft enough to flow into the vertical joints until they are full.

Unless the beds and joints are full you cannot expect to get the full value out of your walls and piers, which, by the way, are always eccentrically loaded. The evil is aggravated when the wall is faced with stone, for the mason generally spreads a bed of putty, 3 in. or 4 in. wide, along the outer edges of the stone he is laying (which may be 14 in. or 18 in. on bed, such as I have lately seen), points up the back edge, and, after having poured some grout down the vertical joints, considers he has made a solid job. Have the stone taken up again and note the result. Workmanship of this sort leads to "flushing" and the fall of pieces of stone. The bed of every course of masonry should be screeded.

Many people object to slate damp-proof courses, as they become inefficient owing to the slates cracking. They only crack or crush when they have been imperfectly bedded. The usual way is to lay them on a bed of cement (perhaps containing a number of small stones) and tap them down with the trowel. This always results in the centre of the slate being unbedded. Walk along such a damp-course on your heels, and you will demonstrate to the builder in a striking manner the hollowness of his work.

Use cement made with a sand that contains no small stones, rub each slate well into its bed, and you will get a damp-proof—not a damp—course.

I am not partial to asphalt damp-proof courses unless they are of genuine asphalt. Artificial asphalts are brittle when cold, but become soft in the heat of summer or near a heating chamber, and squeeze out. This allows settlement, and, in the case of a retaining or other wall with a lateral thrust to sustain, may allow sliding on the bed, a result which happened not very long ago "somewhere in the Midlands." Failures have occurred by using unsuitable materials in the composition of concrete.

Many overhanging cornices of stone or brickwork and cement have become dangerous through being insufficiently weighted or tied down.

The weight of the overhanging portion and its overturning moment must be carefully estimated, and a sufficiently heavy blocking course added so as to obtain a moment of stability of at least two.

The top of the wall upon which the cornice rests should at the same time be well tied in, for the cornice, though stable in itself, will by reason of the eccentric load it imposes upon the wall tend to draw it outwards.

From cement cornices the modillions and sheets of cement will fall, and I have noticed this to occur generally after a period of prolonged wet weather.

In my district there are many parapets with balustrades of Roman cement containing iron cores which have rusted, bursting the balustrades so that pieces fall on to the footway.

The type of cornice and parapet most prone to fall is that occurring in a terrace of houses having V-shaped roofs. There is a considerable area of thin wall exposed to the weather on both sides; wet and frost soon destroy the cementing properties of fat lime mortar, and then the overhanging weight of the cornice, plus perhaps a little wind pressure or vibration, brings the whole lot down.

A case that frequently occurs is that of the wall supported upon a beam of timber, which in turn is often carried by timber story posts. In course of time these timbers become decayed, nearly always at the ends, and generally through water gaining access.

In some premises in Holborn where a new shop front was to be inserted I found that both ends of the wooden bressummer were absolutely rotten for a length of 2 ft. to 3 ft.

The rainwater pipes which came down the face of the buildings had a "swan neck" just above the level of the shop front, the pipes from thence downwards being recessed into the face of the piers separating the premises. The pipes had become partially choked at the swan necks and had leaked at the joints, this having gone on for years. The timber in consequence became rotten, and the front wall had settled considerably.

It would have collapsed had it not been for a small 3-in. cast-iron column in the centre of the shop front, and the friction against the walls of adjoining premises. The only support to this column was the 4 × 3 in. rolled iron joist.

The condition of the front bressummer caused me to inspect that which carried the main back wall. This I found to be in a still worse state, as the wet had been getting behind the flashings of the flat roof over the rear portion of the ground story. A choked or defective gutter over the cornice of the shop front is another cause of rotten bressummers.

To deal with these cases the wall must be needled and shored, "punching up" the solid part of the beam before cutting any holes for needles, and then a new bressummer inserted."

THE CHURCH OF OUR LADY OF SORROWS, CIRENCESTER-STREET, HARROW-ROAD, W.

The new schools and church additions to the Church of Our Lady of Sorrows, Cirencester-street, Harrow-road, W., were opened by His Eminence Cardinal Bourne, Archbishop of Westminster, on April 14. The original church has been extended and new classroom and concert hall, with roof and playground over, have been added. The work was entrusted to Messrs. E. A. Roome & Co., building contractors, of Urswick-road, Hackney, and carried out under the supervision of Messrs. Tasker, Williams, & Major, architects, of 2, John-street, Bedford-row, W.C.

THE BUILDING TRADE.

THE INCREASE OF RENT ACT.

THE Increase of Rent and Mortgage Interest (War Restrictions) Act, which came into force on December 23, 1915, has already produced some unlooked-for results, as is shown by the two actions brought by arrangement to ascertain its effect, Rees *v.* The Marquess of Bute and Davies *v.* The Same.

Lord Bute had put up for sale by auction some 150 cottages on leases for ninety-nine years at a small ground rent, the tenants to pay the rates, taxes, and outgoings, to do the repairs, and keep the cottages insured. The conditions of sale were prepared before the Act came into force, but the sale took place on January 24, 1916, and at the time of the sale neither Lord Bute nor his advisers were aware that the Act would affect it. After the sale they became aware of the provisions of the Act, and Lord Bute declined to complete until the opinion of the Court had been taken. The action was for specific performance. Rees, who bought one of the cottages, was not a former tenant; but Davies was tenant of the cottage he bought.

The purchase price of the cottages was £55 and £57 10s. respectively, and £2 10s. for solicitors' and auctioneers' charges. It was admitted that the properties were of a character to which the Act would apply.

The questions raised were:—1. In both cases would the purchase-money be "a fine, premium, or other like sum in addition to the rent," on the grant of a tenancy within sect. 1 (2) of the Act? 2. In the case of the purchasing tenant, would the transfer to him of the liability to pay rates, taxes, repairs, and insurance come within sect. 1 (1) (III.) of the Act?

Mr. Justice Younger, in delivering judgment, said that the sales were beneficial to the tenants, and the action of Lord Bute in enabling persons to purchase was much appreciated in South Wales. The purchase-money and the other liabilities would represent a less sum than the "standard rent," but he could find nothing in the Act to exclude leases for ninety-nine years from being tenancies within the Act, and, that being so, the payment of the purchase-money would be a "fine, premium, or other like sum in addition to the rent," recoverable by the tenant under sect. 1 (2). In these circumstances he refused to grant the plaintiffs specific performance of the contracts, and on the undertaking of the defendant to repay the sums he had received the actions would be dismissed.

The actions being of a friendly nature the costs had been arranged. This finding on the first point made it unnecessary for a decision to be given on the second point as to the purchaser who was a tenant.

In our issue for January 21, in an article on this Act, we pointed out that in the passage of the Bill through Parliament the Act had lost its original character as an emergency measure mainly designed to prevent tenants from being exploited in areas where population was congested for war purposes, and in its present form as an Act of universal application we took exception to it.

In the judgment of the learned Judge he expressed great regret that he was compelled to set these contracts aside, but he said the Act compelled him to do so, as, although the Act was an emergency measure obviously, as its title indicated, passed to meet a crisis, especially in munition areas, the courts were compelled to construe it as framed.

We have always wondered how the original intention of this Act came to be so entirely overlooked in the passage of the Bill through Parliament, but now it is proved that in consequence of its provisions even a long lease of small properties highly beneficial to the tenants and other persons cannot be granted we trust that steps may at once be taken to amend the Act so that it may carry out the original intention and nothing more.

NEW GOVERNMENT CONTRACTS.

War Office.

Stoves, etc.—Albion Iron Company (London), Ltd., Belper, Derbyshire; Callendar Iron Company, Ltd., Falkirk; Carron Company, Carron, Stirlingshire; Dobbie, Forbes, & Co., Larbert, Stirlingshire; Falkirk Iron Company, Ltd., Falkirk; S. J. & E. Fellows, Ltd., Wolverhampton; Forth and Clyde and Sunnyside Iron Companies, Ltd., Sunnyside Iron Works, Falkirk; W. N. Froy & Sons, Ltd., Brunswick Works, Hammersmith, W.; Griffiths & Browett, Ltd., Birmingham; Jones & Campbell, Ltd., Torwood Foundry, Larbert, Stirlingshire; Orme, Evans, & Co., Ltd., Wolverhampton; Richmond Gas Stove and Meter Company, Ltd., Warrington; Scottish Central Iron Company, Ltd., Falkirk; Standard Engineering Company, Ltd., Evington Valley-road, Leicester; Stirlingshire Iron and Stove Compony, Bonnybridge, Stirlingshire.

Works Service.—Drainage, etc., at Newmarket: H. E. Ambrose, Gwydir-street, Cambridge; electric lighting at officers' mess, etc., at Dover: V. G. Middleton, Broadway-chambers, Westminster, S.W.; electric lighting at Portland: G. E. Taylor & Co., 7, Suffolk-lane, E.C.; filter beds, drains, etc., at Dreghorn: J. Scott & Brown, 3, Barclay-place, Edinburgh; sewage pumping plant at South Farnborough; Burn Bros., 3, Blackfriars-road, S.E.; work at smithy and foundry at South Farnborough: Crosley & Co., Ltd., South-street, Farnham.

Maintenance of Camps and W.D. Buildings at Shirehampton and Avonmouth.—G. Pollard & Co., Ltd., Wood-street, Taunton.

PROPOSED NEW BUILDINGS AND OTHER WORKS.*

IN these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works, at the time of publication, have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; L.G.B. for Local Government Board; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.

Aberdeen.—At a recent meeting of the Aberdeen Harbour Board the Lands and Fishings Committee reported on the proposed extension of ground at Torry as the site for a shipbuilding yard, for Messrs. John Lewis & Sons, Ltd. The new plan implies the alteration of the line of South Esplanade East, and the area leased to the firm will be increased from 7,018 to 9,600 yds. The report was adopted.

Auckland.—The Plans Committee of the U.D.C. has considered a plan for a proposed garage for the United Automobile Services, Ltd.

Bournemouth.—The Tramways Committee of Bournemouth B.C. is arranging for the immediate erection of a tramways shelter at Poole Terminus. The L.G.B has sanctioned the raising by the B.C. of the sum of £1,000 for cliff protection works. Subject to the consent of the Board of Trade, the B.C. has decided to construct groynes at Undercliff-drive. The Borough Engineer has been instructed to erect refreshment-rooms at foot of East Cliff Lift and at Fisherman's-walk. The following plans have been approved by the Buildings Committee:—New deposits—House, plot 16, St. Alban's-avenue, Mr. E. A. Insley; billiard-room, etc., "Chislehurst," Marlborough-road, Mr. J. A. Longden; house, plot 221, Dunbar-road, Mr. H. Long. Additions, plot 62, Pine-avenue, Messrs. Burridge & Bovill; additions, "Braemar," Alumhurst-road, Mr. J. R. Tile; covered way, "Attleboro'," Wentworth-avenue, Mr. J. Newbury; house, plot 49, St. Alban's-avenue, Mr. W. King; house, site 33, St. Luke's-road, Messrs. George & Harding; house, corner Glen and Wilfred roads, Mr. C. T. Miles; house, plot 219, Dunbar-road, Mr. E. A. Insley; house, plot 22, Spurgeon-road, Mr. W. E. Bailey; alterations and additions, "Connemarra," Knole-road, Mrs. E. E. Hazard. Re-deposit—Amended plan, winter garden on flat, Old Christchurch-road, Messrs. Plummer Roddis, Ltd.

* See also our list of Competitions, Contracts, etc., on page 306.

Bradford.—The Bradford Empire will shortly be closed for alterations and redecorations.

Bristol.—The Docks Committee has granted permission to Mr. S. J. King, acting on behalf of the Cartowners' Association and the Dockers' Union, to erect a shelter for trace horses and their attendants on the quay near Bristol Bridge.

Burryport.—The Council has passed plans of six new houses and one shop near the Derwydd, for Mr. Billings, Swansea.

California.—The Scottish Rite Masons of Sacramento, California, have passed plans for the erection of a temple which will be used exclusively by Scottish Rite Masons, the building of which is to cost £16,000.

Chelmsford.—It was announced at a recent meeting of the Chelmsford R.D.C. that alterations and improvements are to be carried out at Ingatestone Old Post Office.

Crook.—A new surface water drain is to be laid at Woolley-terrace at an estimated cost of £60.

Croydon.—At a recent meeting of the Croydon T.C. the Borough Engineer reported with regard to the Beulah Hill Town-planning Scheme that he had interviewed the principal owners and had prepared draft of a scheme and map which he submitted.

Derby.—The T.C. is to construct a sewer from Osmaston Park-road to the main intercepting sewer, part of which will pass through the Merrils Farm, in order to develop the land acquired by the Corporation.

Dorchester.—The T.C. has approved plans submitted by Messrs. John Groves & Sons, of Weymouth, of proposed alterations to stable and cart-house to the Phœnix, High East-street, and on behalf of Mr. T. Lynes by Mr. F. T. Maltby of proposed alterations to stables in Princes-street to turn them into motor garages.

Dumbarton.—The Western District Committee of the Dumbarton C.C. recently considered a report from a sub-committee on the housing question. It was decided to continue the remit to the sub-committee to enable it to obtain a report upon sites, plans of buildings, estimates, etc.

Dundee.—Dundee Harbour Trustees have had before them a proposal by the Caledon Shipbuilding and Engineering Company, Ltd., for a large extension of their shipyard.

Durham.—Funds are being raised for renovation purposes at the Bethel Chapel, North-road, Durham.

Ely.—The U.D.C. has approved plans, submitted on behalf of the Shell Marketing Company, for a combined office and pumphouse on the premises of the G.E.R. station; also plans of a motor garage, for Mr. H. Downie, and house in Barton-road, for Mr. B. J. Gentry.

Fochaber.—Tenders have been accepted for the erection of a jam factory for Mr Baxter, merchant, Fochaber. The architect is Mr. John Willet, Elgin.

Folkestone.—The T.C. has approved of the following:—Plans, submitted by Messrs. Barr & Egbert (owners) (Mr. F. J. Cox, architect, Messrs. W. Silk & Son, builders) for a temporary hippodrome at the rear of Linden-crescent, as a temporary building; plans submitted by Mr. F. Nicholls (owner, architect, and builder) for additions to 86, Shorncliffe-road. The Council has deferred consideration of the plans submitted by Messrs. Youngs & Old (owners), Mr. A. R. Bowles (architect) for additions to garage, Cheriton-road; also plans submitted by the Central Picture Theatre, Ltd. (owners), Mr. J. Vant (architect), for additions to the Central Picture Theatre, George-lane.

Grantham.—The T.C. has approved plan for the reconstruction of a warehouse at Earlsfields Works, for Messrs. A. & J. Shaw, Ltd.

Hayes.—The U.D.C. has received tenders for the Botwell housing scheme, which have been forwarded to the L.G.B.

Hebburn.—It has been decided to rebuild the Hebburn Colliery Workmen's Social Club. Plans, which have been prepared by Mr. G. R. Smith, architect, South Shields, have been approved by the Hebburn U.D.C

Hexham.—The following plans have been passed by the R.D.C.:—Plans for semi-detached house and shop at Allen View, Catton, for Mr. Geo. Newman, builder; and plans for a new wash-house, and alterations to out-offices, at Barrasford, for the Duke of Northumberland.

Horbury.—At a recent meeting of the D.C. plans were approved for the erection of two cottages in Rayner-street, for Mr. J. Dyson; a transformer shed at Millfield Mills, Horbury Junction, for Messrs. Archer, Ritchie, & Co., Ltd.; and a wooden stable in New-street, for Mr. A. Kershaw.

Huddersfield.—At a conference of delegates of the Huddersfield Trades and Labour Council held recently, the following resolution was carried:—"That the Huddersfield County Borough Council be requested to take steps immediately to build at least 1,000 houses in order to meet some of the requirements of the borough. The houses to be built by a special rate levied for that purpose, and to be built by direct labour, under the supervision of the Borough Engineer."

India.—The Sargodha Municipality has submitted to the Punjab Government an application for a loan for the extension of the Sargodha water supply scheme.

Irvine.—Irvine Dean of Guild Court has passed the following plans:—The British Phenoloids Company, for the extension of works at Gailes-road; the Standard Chemical Products Company, Ltd., to erect a crystallising house and store at their works at Boatstobs; the Hosiery Manufacturing Company, Ltd., to erect dining and cloakrooms for employees. Applications by the Scottish Kinemas, Ltd., to erect a picture house, and by Messrs. A. Cunningham, Ltd., to erect a hosiery factory, were continued.

Kirkby.—The U.D.C. has passed plan submitted by Mr. J. Stowe, of two dwelling-houses in Beulah-road.

London.—Plans have been sanctioned for alterations at the Cambridge, Cambridge-circus; Waterloo Coffee House, Haymarket; and the licensed premises, 60, Wardour-street. The justices have sanctioned plans as to certain alterations to the following houses:—Ancient Foresters beerhouse, 282, Southwark Park-road, Rotherhithe, Mrs. Mary Coombs (widow), licensee; Railway Station, Waterloo-road, Lambeth, Mr. E. F. Bugler, secretary. The following cases of proposed alterations to the undermentioned houses were adjourned for a committee of the justices to view premises:—Morning Star, beerhouse, 231, Rye-lane, Camberwell, and the beer, wines, and spirits off-licensed premises, 691, Old Kent-road, Camberwell. The Westminster City Council has had before it a notification from the L.C.C. of an application by Mr. E. Fisher, architect, for consent to a building for the Royal Geographical Society at the corner of Exhibition-road and Kensington-gore. The Royal Free Hospital in Gray's Inn-road has received an anonymous gift of nearly an acre of land, which will be available for an extension of the hospital particularly needed in connection with maternity work and infant welfare. The Licensing Justices have sanctioned plans of alterations intended to be carried out at the Jolly Anglers, 227, Kentish Town-road—licensee, Mr. Harry Rolles.

Lowestoft.—The T.C. has decided to make application to the L.G.B. for sanction to borrow £16,500 to carry out necessary works of reconstruction for foreshore protection, etc., at the North and South Beaches.

Newcastle.—A proposal has been submitted to the City Council for the leasing for ninety-nine years of the Singleton House site in Northumberland-road for the erection of a large building.

Oldbury.—The Public Works and Buildings Committee of the U.D.C. has recommended that the following building plans be passed:—Rev. E. Cato, extensions to chapel, Parsonage-street; Messrs. Accles & Pollock, sixty-four houses, Newstreet, Rood End; Mr. George Alexander, factory, Rood End-road.

Oswestry.—At a recent meeting of the T.C. the General Purposes Committee recommended that permission be granted to Messrs. E. J. Gittins, Ltd., to erect eight temporary buildings at the rear of their premises in Church-street to be used as motor houses, and that the plan for the erection of house and buildings in Welsh Walls, for Mr. J. E. Morgan Jones, be approved.

Peterhead.—At a recent meeting of Peterhead T.C. a petition and relative plan was submitted by Mr. William and Mrs. Buchan, 19, Ronheads, for warrant to alter the dwelling-house there.

Peebles.—The Perthshire branch of the Scottish Veterans' Garden City Association for the erection of cottages has received £306 from Mrs. Ainslie, Peebles, who wishes this sum to be utilised in the erection of a cottage, to be named the "Charles Alexander Ainslie Cottage."

Perth.—The L.G.B. recently asked Perth T.C. to consider reports regarding the proposed new water supply for the city. The Special Water Committee is inquiring if the L.G.B. would approve of a scheme in which the crude water would be drawn from the River Tay, and has informed them that the Committee has under consideration the question of a subsidiary water supply from artesian wells.

Poole.—The Commissioners of the Harbour Board have approved a scheme of the Corporation to construct a viaduct for carrying watermains across Holes Bay in the vicinity of Creekmoor Bridge.

Portugal.—A Bill has been presented to the Chamber of Deputies to authorise the Municipality of Sobral de Monte Agraço to sell certain property, with a view to devoting the proceeds to the construction of a municipal slaughterhouse, and also, should there be any surplus, a school building.

Ramsgate.—The T.C. has approved the following plans:—For the erection of a shop at No. 13, High-street, owner, Mr. Norman Reeve; for the erection of two houses, Dumpton Park-drive, owner, Mr. W. W. Martin.

St. Helens.—At a recent meeting of the T.C. a letter was submitted from the London and North-Western Railway Company stating that the Refractory Zinc Ore Treatment Company, Ltd., require a site for a new works.

Spain.—The *Gaceta* of March 23 contains a call for tenders by the "Dirección General de Prisiones" for the construction of cells, sick rooms, and four workshops in the central prison of the port of Santa María (Cadiz). The estimated cost of the works is 647,860 pesetas (about £26,000).

Wallsend.—At a recent meeting of Wallsend T.C. the Town Clerk and Borough Surveyor were instructed to go into the question of promoting a town-planning scheme for the eastern portion of the borough, and the Town-Planning Committee reported that the line of the proposed through road from Newcastle to Tynemouth was meeting with the approval of the majority of the authorities interested.

Wareham.—The T.C. has considered an estimate from the Surveyor, amounting to £105, for the repair of the road from the top of West-street to the Union, and the work is expected to be commenced shortly.

Wellington.—At a recent meeting of the B.G. plans and estimates for proposed alterations to buildings were submitted by Mr. Fleming (architect), amounting to £665. These are to be sent to the L.G.B. for approval.

Yiewsley.—The U.D.C. has approved a plan of new stables at the rear of York-place, High-street.

BUILDING AND FURNISHING MATERIAL; ROAD WORKS, SPAIN.

The *Gaceta de Madrid* of March 31 publishes the text of a Royal Decree granting extraordinary credits in favour of certain Spanish Government Departments, as follows:—

Ministry of War.—Barrack construction and improvement works, etc., 500,000 pesetas.

Home Office.—Works in the National Institute of Hygiene of Alfonso XIII., 300,000 pesetas; works in the Cancer Institute, 50,000 pesetas; works in the Mahon Hospital, 150,000 pesetas.

Ministry of Public Instruction and Fine Arts.—Advances to municipalities for the construction of new schools, 600,000 pesetas; extension and improvement works in buildings under the control of the Ministry, 400,000 pesetas.

Ministry of Fomento.—Road conservation works, 3,000,000 pesetas; new road construction, 1,000,000 pesetas; road repair works, 1,500,000 pesetas; construction of agricultural engineering school 500,000 pesetas. (25 pesetas = about £1.)

GENERAL BUILDING NEWS.

SOLDIERS' CHURCH, SOUTHAMPTON.

A temporary church and institute at the Rest Camp, at Southampton, has recently been completed. The building is 65 ft. by 30 ft., inclusive of a recess, at the opposite end to the entrance, which is set apart as the sanctuary. On one side of this is a small vestry, and on the other a store for general purposes. The main entrance is through two porchways, into a vestibule, connecting with the church and institute. The artificial lighting of the structure is carried out by means of electricity, and chairs are provided for the sitting accommodation, up to about 300 persons. The plans for the Camp Church and Institute were prepared by Mr. A. F. Gutteridge, and the erection of the building was carried out by Messrs. G. E. Prince & Son.

LONDON UNIVERSITY COLLEGE EXTENSION.

Facilities for carrying out research work at University College have recently been extended by the raising of new chemical laboratories on a site immediately to the north of the main college buildings. The new laboratories have been erected from designs prepared by Professor F. M. Simpson, F.R.I.B.A. The site fronts upon Gower-place and has a frontage of 315 ft. The area covered by the buildings is about 17,500 sq. ft. The building comprises a half-basement, ground, first, and second floors. The western portion of the half-basement is occupied by the laboratories and research-rooms for physical chemistry. At the eastern end is a room about 50 ft. square, specially designed for large-scale operations. Adjoining this room is a workshop for the construction of apparatus for the departments of chemistry and physics and for the use of students. On the same floor are rooms for the production of liquid air and hydrogen for low-temperature research, and for the main chemical stores. The entrance hall and main staircase are in the middle of the ground floor. To the east are two lecture theatres and preparation-rooms, the library, the private room and laboratory of the Professor of Inorganic and Physical Chemistry. Immediately to the west of the entrance hall is the museum, and next to that is the main inorganic laboratory for second-year students, with rooms adjoining. The laboratory and the balconies have special fan ventilation. Beyond this laboratory is a group of research-rooms. On the first floor, westwards, are the private room and laboratory of the Professor of Organic Chemistry. Adjoining these are the organic laboratory, combustion-room and balance-room at one end, and a group of research-rooms at the other. To the east of the main staircase are the organic theatre, the organic chemical stores, an apparatus store, a dark-room, a spectroscope-room, a service-room, and lavatories. At the east end of the second floor is the laboratory for first-year students. West of the main staircase is the department of pathological chemistry.

TRADE NEWS.

Boyle's latest patent "air-pump" ventilators have been applied to St. John's Church, Simpson-road, Pudmore, Portsmouth.

The New Savings Bank, Leicester, is being supplied with Shorland's warm air ventilating patent Manchester grates by Messrs. E. H. Shorland & Brother, Ltd., of Failsworth.

Among the many uses to which reinforced concrete has been applied is in the foundations of roads, whether finished with wood, granite setts, asphalt, or other material, and it is especially useful in cases where the foundations are bad. The British Reinforced Concrete Engineering Company, Ltd., whose head office is 1, Dickinson-street, Manchester, which has branch offices in 20, Victoria-street, London, have devoted much attention to the matter, and there is little doubt as to its economy, especially with the present prices of labour and material. Including the cost of laying, the cost of reinforcement is about 1s. 3½d. a superficial yard, which, with Portland cement concrete at 20s. per cubic yard, and the cost of excavating and cartage, including finding a shoot, works out at about 28s. 6d. per cubic yard, so that 1s. 3½d. spent in reinforcement would pay for only 1¾ in. in thickness in extra concrete.

RATES OF WAGES IN THE BUILDING TRADE.

THE following are the present rates of wages in the Building Trade in the principal towns of England and Wales. It must be understood that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur:—

——	Masons.	Brick-layers.	Car-penters, Joiners.	Plas-terers.	Slaters.	Plum-bers.	Painters.	Masons' La-bourers.	Brick-layers' La-bourers.	Plas-terers' La-bourers.
	d.	d.	d	d.	d.	d.	d.	d.	d.	d.
Aberdare	9	—	9½	9½	—	9	8	6½	6½	6½
Accrington	10	10	9½	9½	9	9	9½	6½	6½	6½
Altrincham	9½	10	10½	10	8½	10	9	6½	7½	7
Ashton-under-Lyne	11	11	10	10½	9	10	9	6½	6½	7½
Barnsley	9½	9½	9½	9½	9	9½	8½	7½	7½	7½
Barrow-in-Furness	9½	10	9½	9½	9½	9½	9½	7	7	7
Barry	9½	9½	9½	10	—	9	8½	6½	6½	6½
Bath	8½	8½	8½	8	7½	8	7½	6	6	6
Bedford	8	8	8	8½	8	9	6½	5½	5½	6
Birkenhead	11	11	11	11½	11	11	9½	7	7	7
Birmingham	11½	11½	11½	11½	10½	11½	9½	8½	8½	8½
Bishop Auckland	9	9	9	9	10	9	7½	6	6	6½
Blackburn	10	10½	10	10	9½	10	9½	6½	7½	7½
Blackpool	10½	9½	9½	9½	8½	9½	8½	6	6	6
Bolton	10	10½	10	10½	10	10	9½	6–7	7	7
Bournemouth	8½	9	9	9	8½	9	8½	6½	6½	6½
Bradford	10	10	9½	9½	10	10	8½	7½	7½	7½
Bridgwater	6½	6½	6½	6½	6½	6½	6	4	4	4
Brighton	9	9	9	9	—	9	7½	6½	6½	6½
Bristol	10½	10½	10½	10½	—	10½	9½	8	8	8
Burnley	10	10½	9½	9½	8	9½	9½	7	7	7½
Burton-on-Trent	9	9	9	9½	9	9	8½	6½	6½	6½
Bury	11	11	10	9	9½	10	9½	7	7½	7½
Cambridge	9½	9	9	9½	9½	9½	7½	6	6	6
Canterbury	8½	8	8	10	—	8½–9	7	5	5	5
Cardiff	10½	10½	10½	10½	10½	10½	9½	7½	7½	7½
Chatham	8	9	9	9	9	9	7½	6	6	6
Chelmsford	8	7½	8½	9	—	7½	6½	5	5	6½
Cheltenham	8½	8¼	8½	8½	—	8½	8½	6	6	6
Chester	9½	10	10	9½	9½	9½	8½	6½	7	½
Chesterfield	9	9	9	8	9	8½	8½	5½	5½	5½
Colchester	8	8½	8½	9	8	9	6	5½	5½	5½
Coventry	10½	11	11	10½	9½	11	10	8½	8½	9
Crewe	7½	8	7½	9	8½	8	7½	5½	5½	
Darlington	9½	10	10	10½	10	9½	8½	7	7	7
Derby	9½	9½	9	9	9	9	8	6½	6½	7
Doncaster	9½	9½	9	9½	9½	9	8	6½	6½	7½
Dudley	8½	10	10	8½	8½	8	7½	6½	6½	6½
Durham	9	9	9½	9	10	9	8½	6	6	6½
East Glam and Mon. Valleys	10	10	10	10	—	—	9	7	7	7
Exeter	8	8½	8½	8½	7½	7½	7	5½	5½	5½
Folkestone	8½	8½	8½	9	8½	8½	7–7½	6½	6½	6½
Gloucester	8	8½	8½	8	8	8½	8	5½	5½	5½
Grantham	8	8	7½	7½–8	7½–8	7	6½	5	5	5
Grays	—	10	10	—	—	9½	8½	7	7	7
Grimsby	9	9	9	9½	9	9	8½	7	7	8
Great Yarmouth	8	8	8	—	8	8	6½	5	5	—
Halifax	10	10	9½	9	9	9	8½	7	7	7
Harrogate	9½	9½	9	9	8	9½	8½	6½	6½	6½
Hartlepools	10	10½	10½	10½	10	10	9	7½	7½	8
Hastings	8½	8	8	8½	8	8	7	6½	5½	6½
Hereford	8	8	7½	8½	8	7	7	5½	5½	5½
Huddersfield	11	11	9½	9½	10	9	8½	7½	7½	7½
Hull	10½	10	10	10	10	10	9	8	8	8
Ipswich	8½	8½	8½	9	9	8½	7	5½	5½	5½
Lancaster	10	10	9	9	9	9	9	6	6	6½
Leamington Spa	9	9	9	8½	9	9	8	6	6	6
Leeds	10½	10½	10½	10½	10	10	8½	7½	7½	8
Leicester	10½	10½	10½	10½	11	10	9	8	8	8½
Lincoln	9	8½	8½	9	8½	8½	8	6	5½	6½
Liverpool	11	11	11	11	10½	11	9½	7	7	7
Llanelly	9½	9½	9½	8½	9	8½	8	5½	5½	5½
London	11½	11½	11½	11½	—	1s.	9	8	8	8
Loughborough	9	8½	8½	9	9	8½	7½	5½	5½	6½
Luton	9½	9	9	8½	9	8½	7½	6½	6½	6½
Maidstone	9	9	9	9	9	9	8	6	6	6
Manchester	11	11	11	11	10	11	9½	7½	7½	7½
Mansfield	8½	9	8½	8½	—	8½	8	6	6	—
Merthyr Tydfil	9½	9½	9½	9½	8½	9	8	6½	6½	6½
Middlesbrough	10	10½	10½	10½	10	10	8½	7½	7½	8
Newcastle-on-Tyne	11	11	11	11	10	10	9½	7½	7½	7½
Newport, Mon.	10	10	10	10	8½	10	9	7	7	7
Northampton	9	9	9	9	8½	9	8	6	6	6
Norwich	8½	8½	8½	8½	8	8½	7½	6	6	6
Nottingham	11	11	11	10½	9½	10½	9	8½	8½	9
Oldham	10½	10½	10½	10	9	10	9½	7	7	7½
Oxford	9½	9	9	9	8	9	8	6½	6½	6½
Plymouth	9*	9*	9*	9*	9	9*	8	6½*	6½*	6½
Pontypridd	9½	9	9	9½	9	9	8	6½	6½	6½*
Portsmouth	9½	9½	9½	9½	9½	8½	7½	7	7	7
Preston	10½	10½	10	9½	9½	10	9½	6	7	7½
Reading	9	9	9	9½	—	9	7½	6*	6*	6*
Rochdale	10½	10½	10	10	8½	10	9	7	7	7½
Rochester	8	9	9	9	9	8½	7½	6	6	6
Rugby	9½	9½	9½	9½	8	9½	8½	6	6	6
St. Albans	9	9	9	9–10	9	9–10	8	6½	6	6½
St. Helens	9	9½	10	9½	9½	9½	9½	6	6½	6
Scarborough	9	9½	9	8½	8	9	8	7	7	7
Sheffield	10½	10†	10½	9½	10	10	9	7½	7½	7½
Shrewsbury	8½	8½	8½	9½	—	8½	7	5½	5½	5½
Southampton	8½	9½	9½	8½	—	9½	8½	6½	6½	6
Southend-on-Sea	9	9	9	9	P'cework	9	7	6	6	6
Southport	10	10	9½	9½	9½	9½	9½	6½	7	7
South Shields	11	11	11	11	10	8½	9½	7½	7½	7½
Stockport	11	10½	10½	10½	9½	10	9½	6½	7	7½
Stockton-on-Tees	10	10½	10½	10½	10	10	9	7½	7½	8
Stoke-on-Trent	9	9½	9	9	—	8½	8½	6	6	—
Stroud	7½	7½	7½	7½	7½	7½	7	5	5	5
Sunderland	11	11	11	10½	10	9	9½	7½	7½	7½
Swansea	9½	9½	9½	9½	8½	9	9	6½	6½	6½
Taunton	7	7	7	7	—	6	6½	4½	4½	4½
Torquay	8	8	8	8	8	8	8	6	6	6
Wakefield	9½	9½	9	9½	8½	9	8	7	7	7
Walsall	9½	9		9½	8½	10	8	6½	6½	6½
Warrington	8½	10½	10½	10½	8½	10½	9½	6½	6½	6½
West Bromwich	10	10	10	10½	—	9	8	7	7	7
Wigan	10	10½	9½	9½	9½	9½	9½	7	7	7
Windsor	9	9	9	10	—	9	—	6	6	6
Wolverhampton	9½	10½	10½	11	8	10	8	7½	7½	7½
Worcester	8½	9½	9½	9	9	9	7½	6½	6½	6½
York	9½	9½	9	9½	9½	9	8½	7	7	7

The mason's rate given is for bankers; fixers usually ½d. per hour extra.

* War bonus of 2s. per week granted. † War bonus of 3s. per week granted.

THE SURVEYORS' INSTITUTION:

TOWN PLANNING.

In our last issue we gave the first part of a paper read by Mr. W. R. Davidge at the Surveyors' Institution on the 10th inst., entitled "The Principles and Position of Town Planning." We now give a further part of this interesting lecture.

Zone System and Commercial Districts.

"The division of a district into building zones in which different building regulations apply has not found favour in English practice, although separate districts for buildings of the warehouse or factory class have been adopted at both Ruislip and Birmingham.

From the point of view of protection of property-owners in residential districts, some form of restraint as to the location of commercial buildings is clearly necessary, and, so far as the Act has gone, the constitution of separate areas for factory and commercial purposes has been carried out without difficulty.

As so many of us are aware, however, the real test of such restrictions will be felt in the next generation. With the continual growth and prosperity of a town the commercial area will surely expand, and unless adjacent space is provided for expansion the business side of the town will necessarily overflow into the residential quarters. In all old centres this alteration of use is continually before our eyes. In New York, within the last few years, business which formerly was done in Twenty-third-street has now moved up as far as Forty-second-street, and an entirely new shopping district created.

Even in London the one-time quiet residential Hanover-square is rapidly assuming a commercial character, and the once peaceful quiet of Soho-square has long been broken into by the pickle factory. Such changes are in the nature of things, and, however hard and fast the restrictions of a town-planning scheme may be drawn, it is evident that unless the plan itself also provides for extension mere legal restrictions will have no more force than the out-of-date paper restrictions of many one-time high-class residential estates, more honoured in the breach than in the observance.

Provision must therefore be made for the gradual expansion of commercial districts.

The phenomenon of the overflowing of business into the residential areas of a town is constantly before our eyes, but it is curious to note that in nearly all towns, no matter how old, the heart of the business community still has its nucleus in the area of the original settlement. No matter how Oxford-street or Kensington High-street may flourish, the City of London still holds its own so far as the business community is concerned. The same is true of New York, where the nerve centre is still in the original commercial settlement at one time bounded by Wall-street.

Increased Height of Business Premises

It is the endeavour to crowd as many office buildings as possible near this commercial centre that has created the "skyscrapers" of Lower New York. This tendency towards increased height of buildings in commercial centres is equally noticeable in such cities as Sydney, Melbourne, Winnipeg, Vancouver, and even in comparatively small cities like Regina. *There is everywhere a tendency to increased height of business premises.*

Control of Building Heights.

The New York authorities have given much consideration to the important question of regulating the height of buildings. In Lower Manhattan there has for many years been a growing tendency towards the erection of tall "skyscrapers," mostly office buildings. The excuse for this has been the limited area available in the older commercial quarter of the city, but the real purpose has in many cases probably been for advertisement purposes. The Woolworth Building at present easily holds the record. When I visited the Woolworth Building I entered the lift, and was carried up by express "elevator" to the fifty-first story. Then I changed lifts and went up another four stories—fifty-five stories in all. As an investment, however, hardly any of these tall buildings pay. Such buildings, too, only add to the existing congestion, and, to emphasise this point, it is stated that if the 10,000 occupants of the Woolworth Building all left off work to go home at one time by the nearest electric railway it would take the railway's full capacity for twenty-two minutes to get them all away—and this from only one building. The City of New York is already spending some £73,000,000 in the construction of electric subways, and in the interests both of economy and public health the city has now decided to discourage the erection of buildings above a reasonable height.

In this connection the Report of the Heights of Buildings Commission for New York City gives some interesting information, proving conclusively that the very tall building is not a paying proposition:—

"The cost per cube foot for a skyscraper is given as 2s. 6d. to 3s. 1½d. (60 to 75 cents), as compared with 1s. 8d. to 2s. 1d. (40 to 50 cents) per cube foot for a low building of the same class. The loss of space on the ground floor taken up by the thirty or so lifts, and as much more for the necessary lobbies, is even more serious. Ground floor space in such buildings often rents at £4 per square foot ($20), and the loss of something like 4,000 sq. ft. of floor space means an annual loss of £16,000 on this floor alone. A ten-story building would sa e two-thirds of this. The loss on the upper floors, due to the space taken up by lifts, etc., also amounts to a surprising total. This means that tall buildings reach a limit beyond which the loss in space on the lower floors more than counterbalances the profit on the upper floors. Every building, according to its shape, size, location, and use, has its economic limit.

Even though a high building may pay a moderate return as long as it stands alone, and is surrounded only by low buildings, so that all its floors are light and attractive, the result is bound to be very different after it is surrounded by similar buildings, shutting off light and reducing rentals on the lower floors."

In the interests of traffic facilities, public health, and public economy the height of buildings should be kept within reasonable limits.

It is interesting to note, however, that even in Central New York (Manhattan) the average building height is still only 4·8 stories. The buildings over ten stories constitute only 1·11 per cent. of the total. Out of 92,749 buildings in Manhattan there are only 1,048 buildings over ten stories in height; ninety buildings over seventeen stories in height; fifty-one buildings over twenty stories in height; nine buildings over thirty stories in height.

Limits of Height.

The *limits of height of buildings* in various cities are at present as under:—

London.—80 ft.

Paris.—In streets less than 40 ft. wide, street width + 20 ft. In streets over 40 ft. wide, 58·64 ft. + ¼ (width — 40 ft.).

Berlin.—Maximum 72·2 ft. (22 mètres).

Boston.—District A, 125 ft., or 2½ times width of street. District B, 100 ft., or 1¼ times width of street. (Buildings over 80 ft. only allowed on streets over 64 ft. wide.) Special restriction to 70 ft. on blocks adjoining State House.

Washington.—Pennsylvania-avenue.—160 ft.; other business streets, 130 ft., or street width + 20 ft.; residence streets, 85 ft.; or streets over 70 ft. wide, street width — 10 ft.; streets 60 ft. to 70 ft., 60 ft.; streets less than 60 ft., street width.

Other American Cities.—Baltimore, 175 ft.; Chicago, 200 ft.; Los Angeles, 150 ft.; Salt Lake City, 125 ft.; Toronto, 130 ft.

New York.—Limit of height of apartment and tenement houes, 1½ times street width.

The New York Commission recommend the limit of height for all buildings within 100 ft. of Fifth Avenue to be 125 ft., and that the general restriction for residential districts should be 1½ times street width, *i.e.*, for 60-ft. streets height would be 90 ft., and for business streets 2 times street width with maximum of 300 ft. A number of American cities, including Baltimore, Milwaukee, Minneapolis, and Los Angeles, have in recent years established separate residential and industrial districts.

Limitation of Houses per Acre.

In England, although land values in our towns have reached a considerable height, there has been no great demand for very tall buildings, and it is probable that the present height limits, where established, are sufficient to check this tendency. The limitation of the number of houses per acre has, however, been enthusiastically taken up in this country. The effect of such a limitation must be at least two-fold. It tends first to spread the town, and consequently the values, over a larger area, and by restricting the use to which land is put must to that extent decrease the value per acre of land which is already ripe for building. At the same time it will tend to give a corresponding increase of value to land further from the town. Its effect on the already over-built city areas cannot fail to be beneficial, for by fixing a standard of suburban development—a high standard of amenity and a comparatively low standard of price—it will be financially impracticable to force up values in the built-up areas above a reasonable limit, and for the same reason it will not pay to unduly increase the congestion of building. The difficulties of fixing a suitable "land unit" are, however, considerable, and both the Ruislip and Birmingham systems are worthy of study in this respect.

Twelve houses to the acre is a reasonable maximum, but where land is already being developed for cottage property as many as eighteen to twenty houses per acre have been allowed in the case of the first two Birmingham schemes. In any case it is evident that some discretionary power to exceed the limit in particular cases or particular parts of an estate will certainly be taken in practice. Given common sense, however, in both the landowner and the municipality, no difficulty should arise in administering an admittedly difficult point.

In some of our colonies, notably in Queensland and in New Zealand, there has for many years been a statutory limitation of the minimum size of plot which can be bought or sold, and in both colonies this has been fixed at 16 perches, or 1-10th of an acre. This practical limitation of ten plots to the acre has, however, been largely dictated by land registry considerations, and there is no restriction on the number of buildings per acre. In the Colonies, where nearly every house has its quarter acre, the need has not yet been felt for restriction, but it is remarkable how, even in the Colonies, all large blocks are continually being subdivided into smaller and smaller parcels.

THE CAUSES OF DEVELOPMENT.

Influence of Geographical Position.

There is a reason for most things, and not least for the position of towns where they exist. In most cases the community has grown up either because of some natural advantage—the possession of a coal mine, or a well, or a spring, or a ford across a river, or a hill for defensive purposes, or because of its position at a road junction, or along some important line of route.

The commercial success of the town is no less dependent upon a continuation of these conditions. The weekly market perhaps attracts business; the opening of a factory or a new industry brings an influx of people, but the causes which operate to bring about this prosperity are deep set in the natural, geographical, and strategical position of the town.

Private residents will not be attracted to a town which is a blot on the landscape, and businesses will not come unless there is business to be done. Any town plan, therefore, for the development of a town must *aim first at making the utmost of all such natural and geographical advantages, and then at guiding the development into the most advantageous lines for the benefit of the town and its residents.*

Transit Facilities.

The provision of efficient and up-to-date means of transit is one of the most important items in the development of towns; yet, strange as it may appear, this all essential detail is omitted from the calculations of many would-be town-planners.

On more than one occasion during my recent visit to the Colonies I was asked to advise as to the lay-out of estates or townships many miles

away from any existing community, with no special *raison d'être* of their own, and which under hardly any circumstances could become self-supporting and self-contained. It is evident that, *in the absence of any special commercial or natural advantages, or of facilities for easy communication with existing centres, a community cannot expect development.*

It must not be thought from this that any new "garden cities" cannot be created, but they can only be successfully created if they can secure enough commerce or industry to make them self-supporting, or if they are linked up to existing communities by easy and rapid transit of some description, so that the new community can serve either as a branch industry or as a health resort or dormitory to one or more existing towns. *Rapid transit, therefore, is all-important to the success of any town*

In America, where distances are so immense, the transit question inevitably bulks largely, but especially in recent years American towns have given more and more attention to the problem of the quick distribution of passengers from the outlying districts to and from the central or business portions of a town.

"Rapid transit" is therefore one of the first considerations of our American cousins in considering the problem of town development, and it is indeed strange that we in this country are only dimly beginning to realise this in our struggles after new and improved arterial roads. *Main roads and motor traffic are, however, only one part of the problem,* and in America many experts are giving their attention to the solution of the transit problem as a whole."

Rapid Transit.

One of the most useful investigations in this direction, and one which has been of great service as an example to other towns, was that made by the Philadelphia Transit Commissioner in 1913, and his report gives a most exhaustive and comprehensive survey of the transit problem, so far as Philadelphia is concerned. Special study has been given to the transit question in the United States generally, and especially of its effect on town development.

It is naturally found that property in the neighbourhood of a "rapid transit line" develops more rapidly than other parts of the town, and if only one such line exists it will naturally absorb the greater part of the normal growth of the town.

The question of the amount of traffic to justify the construction of a tube railway or tramway subway will depend upon local geographical and commercial conditions, but it is a curious fact that, so far as this country is concerned, no town with a population of less than half a million has ventured to introduce a tube railway or electric "rapid transit" line.

On various parts of the Continent there have been running for some years now a combination of electric light railway and tramway which may have far-reaching results. Many of these are apparently ordinary tramcars and trailers so long as they are in the town, but as soon as they reach the outskirts they travel on a special track of their own. With stops five miles or so apart an average speed of upwards of thirty miles an hour is easily obtained. This system has already proved of great value in bringing passengers and country produce into the cities, and would be of great service in distributing populations if its use were more widely practised.

Trams on special tracks of this description are to be seen in the outskirts of Sydney, and also, of course, in many parts of Holland, though in both these cases the stops are too frequent to obtain the full use of rapid transit facilities.

A most concise and comprehensive report on "The Passenger Transportation Problem" is that recently issued by the General Manager of the Manchester Corporation Tramways, and forms an excellent summary of what has so far been achieved in this direction in America and the principal cities of the Continent.

There is, however, still a wide field for investigation as to the methods of transit most suitable for particular localities, and it is clearly not possible to do more than generalise one or two principles upon which most authorities are agreed:—

(1) Electric "subways" or *tube railways can only be commercially successful where the traffic is large and constant.* Sub-surface railways are therefore only suitable for communities with a population of over half a million or more. Overhead railways are almost equally costly as tubes, and by reason of their noise and ugliness are generally regarded as unsuitable to English conditions.

(2) *Tramways and motor omnibuses are of more service when run in conjunction with rapid transit lines.* In Boston, U.S.A., tramway subways, somewhat similar to that under Kingsway, have been in operation for some years, but, owing to its narrow streets and congested site, the problem in Boston is a very special one.

(3) *Special tracks should, if possible, be provided for tramways,* particularly outside the built-up areas. Special tramway tracks on wooden sleepers laid in grass have been very successful in many parts of the Continent, and they are now being introduced in the new arterial roads recently constructed in the outskirts of Liverpool.

Arterial Roads.

For many people town planning begins and ends with the planning of roads, and there can be no gainsaying that the main roads into and out of a town are the skeleton on which the plan will hang together. They may, in some instances, be the "bones of contention," but all will be in agreement with the general principle of fixing the routes needed for new main roads, including, of course, reasonable circumferential and cross-roads. *The routes for arterial roads should be laid down at an early stage in the town plan, and definitely secured or sterilised from other uses.*

It is remarkable how many of our large towns are now considering this problem of arterial roads. There is evident, too, in this country a tendency towards "circular roads" in addition to radial routes, which, however, must always take the bulk of the traffic. Liverpool has already constructed a fine circumferential boulevard. Birmingham has prepared a scheme showing a circumferential road 100 ft. wide practically encircling the city. The London Traffic Branch of the Board of Trade has also given very considerable attention to this matter, and the conferences of municipal authorities in Greater London have, with the assistance of this Institution and other professional bodies, at last agreed upon a comprehensive scheme of main arterial and circumferential roads for Greater London, the total length of the proposed roads approximating a hundred miles. The financing of the proposals where so many authorities are concerned is, however, a difficult matter, and the signs all seem to point to the necessity for making main roads a national matter. In most other countries "*routes nationales*" have long been an accomplished fact, and the importance of the national point of view must not be lost sight of.

The Road Board established by the Government for this purpose is a recognition of this principle, and it is to be hoped that in the stress of these stormy times the principle of national responsibility for the "King's highway" will continue to be maintained. *Main roads are the property of the nation and should be a national matter.*

Roads and Road Widths.

Much discussion and many conferences during the past six years have taken place on the question of road widths and construction, especially perhaps as to the allocation of space for various classes of traffic.

The general principles arrived at may, I think, be reasonably summarised as follows:—

To secure easy and rapid transit—

(1) *Classification of roads is desirable.*

(2) *Provision for fast and slow traffic (fast traffic should not have to slow up for cross-traffic), and separate tracks for tramways.*

(3) *Sufficient width of roadway for the traffic, but not too wide to be maintained.*

(4) *Sufficient width between buildings for all future purposes.*

To secure the amenity of the highway—

(1) Good views from the road—preserving view points.

(2) Good views of the road—trees, but not too thickly planted.

(3) Pleasant walks alongside the road—grass and trees where possible.

(4) Pleasant halts by the way—an occasional village green or open space.

It should be borne in mind that *estate development is not necessarily an object of main roads.*

And in the lay-out of estates the principles laid down in my paper at this Institution six years ago still hold good, viz.:—

(1) Main routes must take the direction required by the traffic and contour of the ground.

(2) Geometrical planning is not necessarily satisfactory.

(3) Long straight streets, when adopted, should have a definite motive.

(4) Slight curves or irregularities in frontage lines and building lines may often be adopted with advantage.

(5) Line of sight should in most cases be restricted within reasonable limits.

Relaxation of By-laws.

A very important point on which most people are now agreed is, that, *while it is desirable to have a minimum distance between the building lines, a hard-and-fast by-law width is undesirable* whether it be 40 ft. or 50 ft. (or 66 ft. as in the Colonies).

The power to fix building lines is important.

The width of macadam or roadway paving provided should be dictated by the use to which the street is put.

In residential streets the remaining width available may reasonably be devoted to grass margins and tree planting.

The *relaxation of by-laws,* allowed by the Act to be introduced into town-planning schemes, may also in some cases be usefully applied to the by-laws dealing with buildings. The by-law, for instance, requiring party-walls to be carried above the roof, might in most cases reasonably be waived, and there is also something to be said for the suggestion that in country districts wooden buildings might be permitted subject to reasonable restrictions Even under the London Building Act it is possible to build a wooden house provided it is 30 ft. from the adjoining property or any other building, and it should be at least possible to do the same in the country.

Internal Improvements.

For some years now it has been felt *that there should be some means of extending the principles of the Town Planning Act to the internal or built-up area of towns,* but many difficulties confront us in this direction, and it is probable that for some years to come internal street improvements will have to be the subject of special enactment in each case.

Some extension to the whole country of the principles of the Metropolitan Paving Act, 1817 (*Michael Angelo Taylor's Act*), by which local authorities in London can by simple resolution purchase land for street improvement, *would undoubtedly greatly simplify the procedure of local authorities.*

Compulsory Town Planning.

Another point which has been much discussed is as to the desirability or possibility of making town planning compulsory, and it is probable that all will be agreed that *the time has not yet come for compulsory town planning.*

In Massachusetts and other States the appointment of a town-planning board is compulsory for all towns with a population of over 10,000. In Canada the Nova Scotia Town Planning Act, passed in April, 1915, makes town planning compulsory for the whole of Nova Scotia, and this experiment will be watched with interest.

Progress in the Colonies and India.

The other Canadian Provinces which have adopted special town planning Acts are New Brunswick and Alberta in 1912. It is probable that the remaining provinces will shortly follow suit, and the same may be said of the various Australian States and the New Zealand Government. In India the Bombay Government has already led the way in this respect.

(To be continued.)

List of Competitions, Contracts, etc.

For some contracts still open, but not included in this List, see previous issues. **Those with an asterisk (*) are advertised in this number:** Competitions, —; Contracts, —; Public Appointments, —; Auction Sales, xvi. Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

*** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.

Contracts.

BUILDING AND PAINTING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

APRIL 20.—**Walker-on-Tyne.**—PAINTING.—The Walker Co-operative Society, Ltd., Lamb-street, Walker-on-Tyne, invite tenders for the painting of the Society's business premises and dwelling-house property situate in Lamb-street and Wharrier-street, Walker; also their business premises and dwelling-house property situate in Welbeck-road. Specifications, etc., at the office, Lamb-street, Walker.

APRIL 21.—**Huntingdon.**—WALL.—For the rebuilding of a wall at the Huntingdon Workhouse. Particulars from the Master.

APRIL 22.—**Lowca.**—HOUSES.—For the erection of two dwelling-houses in Stamford Hill-avenue, Lowca, for the Harrington Coke Ovens Company, Ltd. Plans and specifications can be seen at the office of Mr. Charles W. Eaglesfield, architect and surveyor, Gordon-street, Workington.

APRIL 22.—**Wexford.**—COTTAGES.—For building nine single labourers' cottages for the R.D.C. Particulars of the Council's Engineers, Messrs. Donnelly & Moore, 36, Nassau-street, Dublin, or of Mr. Nicholas Kehoe, Clerk of Council.

APRIL 27.—**Navan (Co. Meath).**—CONVERTING.—For converting the military barracks at Navan, Co. Meath, into a school and residence for the De La Salle Brothers. Plans, etc., can be seen at the Presbytery, Navan, with the Administrator, the Rev. J. J. Poland, or at the office of Messrs. William H. Byrne & Sons, architects, 20, Suffolk-street, Dublin.

APRIL 28.—**Abersychan.**—GARAGE, ETC.—For the erection of a garage and stables situated in "Steep Field," Abersychan, near Pontypool, for the Abersychan Co-operative Society, Ltd. Plans, etc., of Mr. C. F. J. Wilton, architect and surveyor, Midland Bank-chambers, Pontypool.

MAY 1.—**Cwm.**—HOUSE.—For the erection of caretaker's house at Duffryn Schools, Cwm, for the Ebbw Vale E.C. Plans, etc., on payment of £1 deposit in P.O.'s, of Mr. T. J. Thomas, the Town Surveyor.

MAY 1.—**Wigan.**—EXTENSIONS.—For an extension of the Market Hall. Specification, etc., of Mr. A. T. Gooseman, Borough Engineer, Kingstreet West, Wigan.

MAY 2.—**Bradford.**—PLUMBING.—The Bradford Corporation invite tenders for plumbers' work required in the erection of sanatorium buildings at Grassington. General conditions of contract, etc., of the City Architect, Town Hall, Bradford.

MAY 4.—**Langley Moor.**—CEMETERY EXTENSIONS.—For the construction of boundary walls, iron railing, drainage, and road-making in connection with Waterhouses Cemetery, for the Brandon and Byshottles U.D.C. Particulars of Mr. Geo. G. Donkin, Surveyor, Langley Moor.

FURNITURE, MATERIALS, etc.

APRIL 20.—**Govan.**—MATERIALS.—Supply to the Govan Combination P.C. and Govan District Board of Control of builders' materials, etc. Forms of tender, etc., of the Subscriber, Mr. John Mitchell, Inspector and Clerk, 7-8, Carlton-place, Glasgow.

APRIL 24.—**Lochgilphead.**—PAINTS, ETC.—Supply to the Argyll and Bute Asylum, Lochgilphead, for twelve months from May 15, 1916, of paints and oils, timbers, etc. Schedules to be had on application.

APRIL 26.—**Cork.**—PAINTS, ETC.—Supply to the Cork Harbour Commissioners of paints and oils, nails, screws, and files. Forms at the Engineer's Department, Harbour Commissioners' Offices, Custom House-street, Cork.

APRIL 29.—**Glasgow.**—MATERIALS.—Supply to the Corporation Hospitals Department of plumber, engineer, and joiner materials. Forms of specifications from the House Steward at the Hospital, Belvidere, London-road

ENGINEERING, IRON, AND STEEL.

APRIL 21.—**Dundee.**—STEEL WORK.—For the execution of steel work for the erection of store at Dudhope Crescent-road, Dundee, for the Corporation. Schedules of quantities, etc., of Mr. H. Richardson, M.Inst.E.E., General Manager and Engineer, Electricity Department, Dundee.

APRIL 21.—**Dundee.**—STEEL WORK.—For the execution of steel work of roof principals for contractor house, No. 2 pump room, Carolina Port, for the Corporation. Schedules of quantities of Mr. H. Richardson, M.Inst.E.E., General Manager and Engineer, Electricity Department, Dundee.

APRIL 26.—**Walthamstow.**—WATER SOFTENING PLANT.—Supply to the U.D.C. Electricity Department of a water softening plant. Specification, etc., from Mr. G. R. Spurr, Electrical and Tramways Engineer, Priory-avenue, Walthamstow. Deposit, £1.

APRIL 26.—**Warrington.**—BOILER PLANT, ETC.—The Electricty and Tramways Committee invites tenders for the following:—(1) Boiler plant; (2) economiser. Specifications, etc., of Mr. F. V. L. Mathias, Borough Electrical and Tramways Engineer, Howley, Warrington Deposit, £1 1s.

APRIL 27.—**Dublin.**—CARRIAGE UNDER-FRAMES.—The Great Northern Railway Company (Ireland) invite tenders for twelve steel carriage underframes, 58 ft. long. Copies of the specification, etc., of the Secretary at Amiens-street Terminus, Dublin. Deposit, 10s.

APRIL 28.—**London.**—HEATING ACCESSORIES.—The Commissioners of his Majesty's Works, etc., invite tenders for the supply of steam and hot-water heating accessories, etc. Forms of tender, etc., of the Controller of Supplies, H.M. Office of Works, King Charles-street, Westminster, S.W.

APRIL 28.—**West Hartlepool.**—EXTENSION OF BOILER PLANT.—Erection of a circular brick chimney shaft, 100 ft. in height, in connection with the Electric Power Station, adjacent to the Seaton Carew Ironworks, for the Corporation. Plans, etc., of Mr. Nelson F. Dennis, M.Inst.C.E., Borough Engineer, Municipal-buildings.

ROAD, SANITARY, AND WATER WORKS.

APRIL 26.—**Birmingham.**—TAR MACADAM.—For coating with tar macadam the carriageways of certain portions of roads, having a total length of about ten miles, together with other work connected therewith, for the Public Works Committee. Drawings, etc., of Mr. Henry E. Stilgoe, M.Inst.C.E., City Engineer and Surveyor, The Council House, Birmingham. Deposit, £2.

APRIL 26.—**Felling.**—PAVING, ETC.—For paving, channelling, sewering, kerbing, and concreting of back streets at the rear of Smokey-row and Sunderland-terrace, Wardley. Plans, etc., of the Surveyor, Council Buildings, Felling-on-Tyne.

APRIL 26.—**Kent.**—RAG AND BLOCK STONE.—Supply to the Justices and Commissioners of Sewers for the limits extending from Gravesend Bridge to Sheerness, and thence along the River Medway to Penshurst in Kent, of good ragstone, free from hassock, and large block stones. Mr. E. L. Baker, Clerk to the Commission, Bank-chambers, Rochester.

APRIL 26.—**London.**—GRANITE.—Supply to the Lambeth B.C. of broken granite. Mr. Bruce Penny, Town Clerk, Lambeth Town Hall, Brixton-hill, S.W.

APRIL 27.—**Dublin.**—GRAVEL, ETC.—Supply of pit gravel and pit sand for the Corporation. Specifications, etc., from the City Engineer, 28, Castle-street, on payment of 1s. for each form.

Auction Sales.

* MAY 2.—**Stoke Newington.**—Messrs. Fisher, Stanhope, & Co. will sell by auction, on the premises, the stock of a builder, contractor, and decorator.

* MAY 10.—Messrs. Churchill & Sim will sell by auction, at the Great Hall, Winchester House, Old Broad-street, E.C., an assortment of deals, battens, boards, timbers, etc.

* MAY 23.—**Rotherhithe.**—Messrs. Daniel Smith, Oakley, & Gerrard will sell by auction, at the Mart, a Thames-side warehouse and factory premises.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to THE BUILDER LTD., and *not* to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

[Those with an asterisk (*) are advertised in this issue.]

PRICES CURRENT OF MATERIALS.

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry.]

Since our last issue sheet lead has advanced.—ED.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£ s. d.
Per 1,000 Alongside, in River Thames.	
Best Stocks	2 0 0
Picked Stocks for Facings	2 12 0

Per 1,000, Delivered at Railway Depôt, London.

	£ s. d.		£ s. d.
Flettons	1 10 0	Best Blue Pressed Staffordshire	5 0 0
Best Fareham Red	3 12 0	Do. Bullnose	5 5 0
Best Red Pressed Ruabon Facing	5 5 0	Best Stourbridge Fire Bricks	4 15 0

GLAZED BRICKS—

Best White, Ivory, and Salt Glazed Stretchers	13 7 6	D'ble Str'tch'rs	15 1[illegible] 6
		Double Headers	15 17 6
		One Side and two Ends	19 17 6
Headers	12 17 6	Two Sides and one End	20 17 6
Quoins, Bullnose and 4½ in. Flats	16 17 6	Splays and Squints	18 7 6

Second Quality £1 per 1,000 less than best.

	s. d.	
Thames Ballast	7 9	per yard, delivered.
Thames and Pit Sand	8 0	" " "
Best Washed Sand	9 0	" " "

Per ton, delivered.

	£ s. d.	£ s. d.
Best Portland Cement	2 5 0 ..	2 8 0

Do. £2 1s. alongside in 80-ton lots.
Ferrocrete 2s. 6d. per ton extra on above.
Best Ground Blue Lias Lime.... 1 5 6 at rly. depôt.
NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.
Grey Stone Lime ..... 18s. 0d. per yard delivered.
Stourbridge Fireclay in s'cks 30s. 0d. per ton at rly. dpt.

STONE.

	s. d.
BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	1 7
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube	1 8½
Do. do. delivered on road waggons at Nine Elms Depôt	1 9½
PORTLAND STONE—	
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Westbourne Park, G.W.R., South Lambeth, G.W.R., or Nine Elms, or L. & S.W.R. per ft. cube	2 5½
Do. do. delivered on road waggons at Pimlico Wharf or Nine Elms Depôt, per ft. cube	2 6½
White Basebed, 2d. per ft. cube extra.	

RANDOM BLOCKS—Per Ft. Cube, delivered at Rly. Depôt.

	s. d.		s. d.
Ancaster in blocks	2 0	Closeburn Red Freestone	2 2
Beer in blocks	1 7½		
Grinshill in blocks	2 4	Red and White Mansfield Random block	2 9
Darley Dale in blocks	2 5	Yellow Magnesian Limestone do. do.	3 3

YORK STONE—*Robin Hood Quality.*

	s. d.
Per Ft. Cube, Delivered at Railway Depôt.	
Scappled random blocks	3 4
Per Ft. Super., Delivered at Railway Depôt.	
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 5
6 in. rubbed two sides ditto, ditto	2 8
3 in. sawn two sides slabs (random sizes)	1 0½
2 in. to 2½ in. sawn one side slabs (random sizes)	0 8½
1½ in. to 2 in. ditto, ditto	0 6½

HARD YORK—

	s. d.
Per Ft. Cube, Delivered at Railway Depôt.	
Scappled random blocks	3 0
Per Ft. Super, Delivered at Railway Depôt.	
6 in. sawn two sides landing to sizes (under 40 ft. super.)	2 3
6 in. rubbed two sides ditto	2 7
3 in. sawn two sides slabs (random sizes)	1 0
2 in. self-faced random flags	0 5

TILES.

Per 1,000 f.o.r. London.

	£ s. d.
Best machine-made tiles or hand-made sand-faced tiles from either Broseley or Staffordshire district	2 12 6
Ornamental ditto	2 15 0
Hip and valley tiles (per dozen)	0 5 6

SLATES.

Per 1,000 of 1,200 f.o.r. London.

	£ s. d.
Best Blue Bangor slates, 20 by 10	11 16 0
First quality " "	11 10 0
" " 16 by 8	5 15 0
Best Blue Portmadoc, 20 by 10	11 13 6
First quality " "	11 3 6
" " 16 by 8	5 15 0

WOOD.

Timber prices should be confirmed, as the market is *changing daily.*

BEST BUILDING REDWOOD.

Imported sizes.	Per standard. £ s. d.	£ s. d.
Deals: 4 in. by 12 in., 4 in. by 11 in., 3 in. by 11 in., 4 in. by 9 in., and 2 in. by 11 in.	33 10 0 ..	34 10 0

WOOD (*Continued*).

BEST BUILDING REDWOOD.

	Per standard.		
3 in. by 9 in., 2½ in. by 9 in., and 2 in. by 9 in.	32 10 0	..	33 10 0
Battens: 2 in., 2½ in., and 3 in. by 8 in.			
2 in., 2½ in., and 3 in. by 7 in.			
2 in., 2½ in., and 3 in. by 6 in.			
2 in., 2½ in., and 3 in. by 5 in.	31 10 0	..	32 10 0
Scantlings: 2 in. by 3 in., 2 in. by 3½ in., 2 in. by 4 in., 2 in. by 4½ in.			
3 in. by 4 in., and 3 in. by 4½ in.			
Boards: 1 in., 1¼ in., and 1½ in. by 6 in. and 7 in.	0 10 0	}	more than
¾ in.	1 0 0	}	battens.
Seconds: building quality deals, battens, boards, and scantlings	1 0 0		less than best.
Best Middling Dantzic and Memel Fir Timber Logs (average specification)	Per load of 50 ft. cube. 10 0 0	..	—
Seconds do. do.	9 10 0	..	—
9 in. to 10 in. do.	8 10 0	..	—
6 in. to 8 in. do.	8 0 0	..	—
Stocks very limited.			
Sawn pitch pine logs (about 35 cu. ft. average)	Per load. 12 0 0	..	13 10 0
Do. 6 in. to 10 in.	10 0 0	..	11 0 0
Sawn Swedish Balks 4 in. by 4 in. to 6 in. by 7 in.	6 10 0	..	7 0 0
	Per standard.		
Best Pitch Pine Deals	34 0 0	..	35 0 0
Under 2 in. thick	0 10 0		extra.

JOINERS' WOOD.

White Sea Second Quality Red: 4 in. by 11 in.	39 0 0	..	40 0 0
3 in. by 11 in. and 2 in. by 11 in.	38 0 0	..	39 0 0
4 in. by 9 in.	37 0 0	..	38 0 0
3 in. by 9 in. and 2½ in. by 9 in.	36 0 0	..	37 0 0
9 in. by 11 in. boards	1 0 0		more than deals.
7 in. and 8 in. battens	33 0 0	..	34 0 0
7 in. and 8 in. boards	1 0 0		more than battens.
Third quality	2 0 0		less than best.
Fourth quality	£2 to £3		less than seconds.
Archangel White Deals— Best 3 in. by 9 in. and 10 in. and 11 in.	36 0 0	..	37 0 0
Seconds, do.	2 0 0		less than best.
U.S. Battens	30 0 0	..	32 0 0

Prepared Floorings and Matchings, Seconds Swedish Red and equal—

	Per square actual.		
1¼ in. by 6½ in. planed and shot	1 16 0	..	1 19 0
1¼ in. by 6½ in. planed and matched	1 16 6	..	1 19 6
1 in. by 6½ in. planed and shot	1 9 0	..	1 12 0
1 in. by 6½ in. planed and matched	1 9 6	..	1 12 6
¾ in. by 6½ in. planed, matched and beaded, or V jointed	1 4 0	..	1 6 0
1 in. by 6½ in. do.	1 10 6	..	1 12 0
⅞ in. by 6½ in. do.	1 0 0	..	1 1 0

	Per standard.		
Columbian or Oregon Pine, best quality	42 0 0	..	44 0 0
Yellow Pine—First, regular sizes	57 0 0		upwards.
Oddments	39 0 0		"
Seconds, regular sizes	43 10 0		"
Oddments	37 10 0		"
Kauri Pine—Planks per ft. cube	0 8 0	..	—
Wainscot Oak Logs, per ft. cube	0 10 6	..	0 12 6
Dry Wainscot Oak, per ft. super., as inch	0 1 0	..	0 1 3
¾ in. do. no...	0 0 10	..	0 1 0
Dry Mahogany — Honduras, Tabasco, per ft. super., as inch	0 1 0	..	0 1 4
Selected, Figury, per ft. super., as inch	0 1 6	..	0 2 6
Cuba Mahogany	0 1 6	..	0 2 6
Dry Walnut, American, per super., as inch	0 1 0	..	upwards. 0 1 3
French, "Italian," Walnut	0 1 0	..	0 1 6
Teak, per load (Rangoon or Moulmein)	28 0 0	..	34 0 0
Do. do. (Java)	25 0 0	..	27 0 0
American Whitewood planks, per ft. cube	0 6 6	..	0 7 6

METALS.

JOISTS, GIRDERS, &c.

	In London or Railway Vans, per ton. £ s. d.	£ s. d.
Rolled Steel Joists, ordinary sections, basis price	20 0 0 ..	21 0 0
Plain Compound Girders, ordinary Sections	22 0 0 ..	23 0 0
Plain Compound Stanchions	23 0 0 ..	24 10 0
Angles, Tees, and Channels, ordinary sections	20 10 0 ..	21 10 0
Flitch Plates	20 10 0 ..	21 10 0
Cast Iron Columns and Stanchions, plain ordinary patterns	13 10 0 ..	14 0 0

Turning extra.

METALS (*Continued*).

IRON—	Per ton. in London. £ s. d.	£ s. d.
Common Bars	16 0 0 ..	—
Staffordshire Crown Bars, good merchant quality	16 0 0 ..	17 0 0
Staffordshire "Marked Bars"	17 10 0 ..	18 0 0
Mild Steel Bars	18 0 0 ..	18 10 0
Steel Bars, Ferro-Concrete quality, £18 basis price.		
Hoop Iron, basis price	19 10 0 ..	20 0 0
" " Galvanised	30 0 0 ..	
(*And upwards, according to size and gauge.)		
Sheet Iron Black—		
Ordinary sizes to 20 g.	19 10 0 ..	20 0 0
" " 24 g.	20 10 0 ..	21 0 0
" " 26 g.	21 10 0 ..	22 0 0
Sheet Iron, Galvanised flat, ordinary quality—		
Ordinary sizes. 6 ft. by 2 ft. to 3 ft. to 20 g.	30 0 0 ..	—
Ordinary sizes to 22 g. and 24 g.	30 10 0 ..	—
Ordinary sizes to 26 g.	33 0 0 ..	—
Sheet Iron, Galvanised, flat, best quality—		
Ordinary sizes to 20 g.	31 0 0 ..	—
" " 22 g. and 24 g.	31 10 0 ..	—
Ordinary sizes to 26 g.	34 10 0 ..	—
Galvanised Corrugated Sheets—		
Ordinary sizes, 6 ft. to 8 ft. 20 g.	29 0 0 ..	—
Ordinary sizes, 22 g. & 24 g.	29 10 0 ..	—
Ordinary sizes, 26 g.	30 0 0 ..	—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	20 10 0 ..	—
Best Soft Steel Sheets, 22 g. and 24 g.	20 15 0 ..	—
Best Soft Steel Sheets, 26 g.	22 10 0 ..	—
Cut Nails, 3 in. to 6 in.	21 10 0 ..	22 0 0
(Under 3 in., usual trade extras.)		

Galvanised prices are nominal under the present exceptional conditions.

LEAD, &c.

	Delivered in London. £ s. d.	
LEAD—Sheet, English, 4 lb. and up	41 10 0 ..	—
Pipe in coils	42 0 0 ..	—
Soil pipe	45 0 0 ..	—
Compo pipe	45 0 0 ..	—
NOTE—Country delivery 20s. per ton extra; lots under 5 cwt. 1s. per cwt. extra.		
COPPER—		
Strong Sheet per lb.	0 1 5 ..	—
Thin " "	0 1 6 ..	—
Copper nails "	0 1 5 ..	—
Copper wire "	0 1 5 ..	—
BRASS—		
Strong Sheet "	0 1 3 ..	—
Thin " "	0 1 4 ..	—
TIN—English Ingots "	0 2 0 ..	—
SOLDER—Plumbers' "	0 0 11 ..	—
Tinmen's "	0 1 2 ..	—
Blowpipe "	0 1 4 ..	—

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES.

Per Ft.		Per Ft.
15 oz. thirds	5½d.	26 oz. fourths 6½d.
" fourths	4½d.	32 oz. thirds 8½d.
21 oz. thirds	6½d.	" fourths 7½d.
" fourths	5½d.	Fluted Sheet, 15 oz. 5½d.
26 oz. thirds	7d.	" 21 oz. 6½d.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per Ft.
⅛ Rolled plate	4d.
3/16 Rough rolled and rough cast plate	4½d.
¼ Rough rolled and rough cast plate	4¾d.
Figured Rolled, Oxford Rolled, Oceanic, Arctic Muffled, and Rolled Cathedral white	5d.
Ditto, tinted	6½d.
Rolled Sheet	4½d.

OILS, &c.

	£ s. d.
Raw Linseed Oil in pipes per gallon	0 3 5
" " " in barrels "	0 3 6
" " " in drums "	0 3 9
Boiled " " in barrels "	0 3 8
" " " in drums "	0 4 0
Turpentine in barrels "	0 4 0
" in drums "	0 4 3
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)	54 0 0
Red Lead, Dry per ton	56 0 0
Best Linseed Oil Putty per cwt.	0 11 0
Stockholm Tar per barrel	1 12 0
GENUINE WHITE LEAD PAINT— "Blackfriars," "Nine Elms," "Park," and other best brands (in 14 lb. tins), not less than 5 cwt. lots per ton delivered	66 0 0

VARNISHES, &c.

	Per gallon. £ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 6
Fine Elastic Carriage	0 12 9
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 10 0
Finest Pale Durable Copal	0 18 6
Extra Pale French Oil	1 1 0
Eggshell Flatting Varnish	0 18 0
White Pale Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 0
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 0

NEW COMPANIES.

THE undermentioned particulars of new companies recently registered are taken from the Daily Register compiled by Messrs. Jordan & Sons, Ltd., Company Registration Agents, Chancery-lane, W.C. :—

WILLIAM SALTHOUSE, LTD. (143,337). Registered March 20. To acquire, take over, and carry on business of lead, oil, glass, and colour merchant, plumber, painter, decorator, glazier, carried on as William Salthouse, at 21, Church-street, Preston, and elsewhere, sanitary, gas, hot water, and general engineers, builders, hardware and metal merchants, iron-founders, timber merchants, motor engineers, etc. Nominal capital, £5,000 in 5,000 £1 shares.

C. W. SHORTT & Co., LTD. (143,342). Registered March 21. To carry on business as agents for typefounders, manufacturers of and dealers in printing and other machinery, iron-founders, tool-makers, brass founders and metal workers, contractors, builders, painters, electrical and mechanical engineers, news-paper proprietors, etc. Nominal capital, £2,000 in 2,000 £1 shares.

HARLING & GLADWELL, LTD. (143,382). Registered March 24. To carry on business of builder and contractor and timber merchant, now carried on at Townhead Saw Mills, Rochdale, painters, decorators, gas, electric light, hot water and sanitary engineers, dealers in bricks, tiles, terra-cotta, pottery, earthenware, cement, lime, etc. Nominal capital, £5,000 in 5,000 £1 shares.

ARCHIBALD LEES, LTD. (143,403). Registered March 27. To acquire and take over business of A. W. Lees, at Standard Works, Halifax, and carry on business of mechanical, sanitary, electrical, gas, hydraulic and general engineers, bridge builders, machine and engineering tool makers, iron and brass founders, building and general contractors, painters, chemical manufacturers, metal workers, etc. Nominal capital, £3,000 in 3,000 £1 shares.

HENRY RIGHTON & Co., LTD. (143,411), 15, Coleman-street, E.C. Registered March 27. To carry on business of ironfounders, mechanical engineers, and manufacturers of all kinds, metal workers, boiler-makers, etc. Nominal capital, £1,000 in 1,000 £1 Ordinary shares.

ALFRED DANKS, LTD. (143,432). Registered March 29. To establish and carry on business of ironfounders, mechanical, electrical and general engineers, manufacturers of implements and machinery of every kind, tool-makers and metal workers, japanners, gas makers, carriers, merchants, builders and repairers of boats of every description. Nominal capital, £2,000 in 2,000 £1 shares.

E. M. LANDER, LTD. (143,438). Registered March 29. To acquire and take over business now carried on at 617-619, Harrow-road, Kensal Green, as E. M. Lander, and carry on business of monumental stone, marble and granite masons, quarry masters, stone masons, dealers in all builders' materials, builders' contractors, etc. Nominal capital, £2,000 in 2,000 £1 Ordinary shares.

WILLIAMS, ADDIS, & DOUGLAS, LTD. (143,492), 1, Central-buildings, Tothill-street, Westminster. Registered March 31. To carry on business of property owners, land, estate and house agents, auctioneers, builders, etc. Nominal capital, £500 in 1,000 10s. shares.

WALTER ROBB, LTD. (143,493). Registered March 31. To acquire, take over, and carry on business of electrical engineer carried on at Wakefield as Walter Robb, mechanical, sanitary and general engineers, coppersmiths, brass founders, metal workers, etc. Nominal capital, £10,000 in 10,000 £1 shares.

CHAMBERS & MARSH, LTD. (143,502). Registered April 3. To acquire, take over, and carry on business of timber merchants now carried on at Freith-street, Oldbury, as Chambers & Marsh, saw mill proprietors, timber growers, dealers in timber and wood of all kinds, and prepare same for market, builders' contractors, etc. Nominal capital, £10,000 in 10,000 £1 shares.

H. FAGAN, LTD. (143,525). Registered April 6. To carry on business of manufacturers of and dealers in furniture, etc., electric light, and sanitary engineers, builders, cabinet makers, etc. Nominal capital, £1,000 in 1,000 £1 shares.

H. G. COOPER, LTD. (143,526), 6, Fencourt, E.C. Registered April 6. To acquire and carry on business of electrical engineers and general office fitters, carried on at above address, furniture manufacturers, plumbers, hot water and gas fitters, decorators, builders, etc. Nominal capital, £2,000 in 2,000 £1 Ordinary shares.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than 2 p.m. on Wednesday.*

* Denotes *accepted.* † Denotes *provisionally accepted.*

BEDFORD.—For carrying out street improvements to the northern portion of Spenser-road, for the Town Council :—

Jacobs & Burton*	£209

LONDON.—For the construction of foundations, etc., for the third additional turbo-generator to be installed at the Greenwich generating station, for the London County Council :—

C. Wall, Ltd.	£6,853 0 0
J. Ford	6,450 8 8
J. E. Whiter & Co.	5,449 0 0
J. Jarvis & Sons, Ltd.	5,290 0 0
G. Godstone & Sons	4,980 0 0
W. Manders & Co.	4,927 1 0
W. Downs, Ltd., Walworth*	4,751 0 0

[Architect's estimate, £4,500.]

MELTON MOWBRAY.—For asphalting and repairing the footpaths in the district, for the Rural District Council. Mr. E. C. Moorhouse, Surveyor, Wyndham-avenue, Melton Mowbray :—

New work, 1s. 7d. per super. yard; topping, 1s. 1d. per super. yard; repairing tarring and sanding, 2½d. per super. yard.—E. G. Cobley, Goodriche-street, Melton Mowbray.

WEYMOUTH.—For painting outside of Melcombe Regis Boys' School, for the Borough Education Committee :—

T. Conway, Ltd.	26 0
Rendell & Sons	23 0
A. E. Whettam	22 17
Pates Bros.*	19 10

PATENTS.

APPLICATIONS PUBLISHED.*

3,478 of 1915.—Jess Adolph Jensen: Arrangement for drying the masonry in buildings and maintaining it dry.

3,626 of 1915.—Minor Everett Chamberlain: Reinforced concrete or concrete-covered framed structures.

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"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the prepaid rate of 18s. per annum, with delivery by *Friday Morning's Post* in London and its suburbs.

To Canada, post-free, 21s. 8d. per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 26s. per annum.

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Asphalte.—The Seyssel and Metallic Lava Asphalte Co. (Mr. H. Glenn), Office, 42, Poultry, E.C.—The best and cheapest materials for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and milk-rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to Forth Bridge Co. T.N. 2644 Central.

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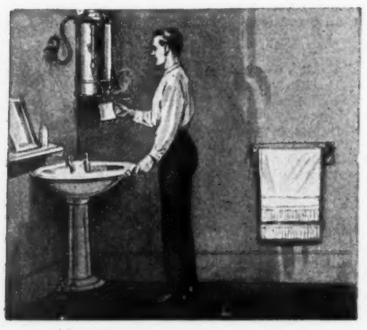

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A RECORD OF ARCHITECTURE AND CONSTRUCTION.

VOL. CX.—No. 3821. APRIL 28, 1916.

THE SHAKESPEARE TERCENTENARY.

WHEN the tercentenary of Shakespeare's birth was celebrated in 1864 the world was enjoying a momentary peace. Lectures, memorials, the performance of many plays then, as now, were obvious means of celebrating the day, and the only jarring note struck in England, probably in the world, was that amazing speech in Exeter Hall recorded in the classic pages of "Father and Son," in which the poet was described to the passionate indignation of both as a lost soul now burning in hell fire. The jarring note this year comes not from an individual, but from a nation. More than ever the Germans are insisting on Shakespeare as a discovery, almost as a writer, of their own, claiming their cause as his if he were still alive, claiming his cause as theirs since he is not. We cannot resent this, for resentment implies a certain degree of justice in the claim or it will lose its sting; we cannot despise it, for it is too ridiculous for scorn. We can only laugh, for laughter is fatal to German pretensions and infallibility, and perhaps console ourselves with the reflection that there has never been a moment in English literary history in which Shakespeare has not been *laudatus a laudato*, honoured by the greatest of his countrymen, hardly a moment in which, somewhere in his England, his plays were not being applauded by the least, save during the gloomy period of Puritan domination following on the execution of that King against whom a fondness for the "lewd profanities" of Shakespeare was brought as a serious charge.

We all know that a change of taste came in with the Restoration, yet Davenant, who reopened the English theatre, was fond of boasting his descent from Shakespeare, and a glance at Pepys' Diary will show how well his plays kept their hold upon the stage. Betterton, the most famous of Restoration actors, won his greatest laurels in "Hamlet." Dryden, playwright as well as poet, does homage to Shakespeare in prose unsurpassed to this day in eloquence as well as justice, and in his generous old age hails the youthful genius of Congreve with the cry that

> "Heav'n, that once was prodigal before,
> To Shakespeare gave as much, she could not give thee more."

Pope edited him, and so, in a better text, did his rival, Theobald; Addison did him honour in prose; Thomson in verse; Fielding habitually quoted him; Garrick, although too often using Tate's "amended" version, set England ringing with his greatest lines, and was painted in some Shakespearean character by most of the artists of the day; Johnson brought out his long-delayed edition, the preface to which is the finest thing he ever wrote. Boswell made himself ridiculous at Stratford at the Shakespeare jubilee of 1764, when fragments of the sacred mulberry-tree were treasured as things of price and sold for then imposing sums; monuments rose in Westminster Abbey and at Stratford; tokens were struck bearing the poet's head. And all this, and more, in the "Philistine" eighteenth century, from whose obscuring clouds Coleridge, in all the self-sufficiency of the Romantic revival, set out to rescue Shakespeare nearly forty years after the publication of the Variorum edition had set the seal of supreme scholarship as well as popular approval on his work.

The late Sir James Murray once said at a public meeting that he believed that the Shakespearean revival, the free use of Shakespearean quotation, was due to Sir Walter Scott. One at least of his audience longed to rise, not to deprecate that great man as a true Shakespearean. "When I want to express a sentiment which I feel strongly, I find the phrase in Shakespeare," says his "Journal"—but to quote the supremely relevant passage in "Mansfield Park," published several years before "Waverley," in which Henry Crawford is made to say, "I do not think I have had a volume of Shakspere in my hand since I was fifteen. But Shakspere one gets acquainted with without knowing how. It is part of an Englishman's constitution. His thoughts and beauties are so spread abroad that one touches them everywhere; one is intimate with him by instinct." No, Shakespeare has never been obscured in England, much less deliberately disregarded. The nation has "to be or not to be'd" every evening of our Christmas holidays, to quote another phrase of Miss Austen's, until "Hamlet" has become part of our common speech and its very ghost a proverb. Take another test, the songs, and see how every generation has set Shakespeare's words to airs that have become the common heritage of Englishmen. Purcell, Stevens, Arne, Bishop, all have set his songs as songs were set before the age of drawing-room music, so that the words and air are one in the memory of all, and later versions only serve to show their own emptiness.

Leigh Hunt threw out a pleasant hint for the private celebration of Shakespeare's birthday, that families and friends should meet to read together one of the greater plays and to sing Shakespearean songs in rooms adorned with the flowers which Shakespeare loved. This is well, and might, as Hunt says, happen appropriately every year. What of this greater anniversary, this tercentenary? The programme proposed—lectures, plays, and the like—is well, but what of a greater and more permanent memorial? The subject of war memorials has already been raised with salutary cautions in these columns; we can but repeat the hope that the memory of Shakespeare, like that of the honoured dead of to-day, may not be insulted with vain and pretentious erections which bear witness to nothing but the incurable want of a monumental sense in modern England. The text of Shakespeare is as perfect as modern scholarship can make it; the setting of his plays wants no accessory which theatrical skill can devise. We have a Shakespeare Theatre at Stratford-on-Avon; we have whole companies devoted to the performance of his plays; we have the promise, if not yet actually the fulfilment, of a National Shakespeare Theatre, on a site admirably adapted for the purpose near the British Museum and University College. This theatre, the absence of which constituted the greatest blot on the literary side of our national escutcheon, is one of the many reforms postponed owing to the war, and, though we may well regret that the official celebration of the tercentenary cannot take place, as might have been hoped, within its walls, yet here as elsewhere the project is postponed to the convenience of public service in other fields. When the first performance shall be held in the completed theatre it will be felt to be in fact, as it will be in spirit, a public commemoration of the tercentenary.

The theatre being secured, can we not devise another means of commemorating the great name? Now that threats of invasion by sea and actual invasion by air have brought home to all the value of the land of England as our country, have roused the love of England as our goodly heritage, can we not ensure the preservation of some tract of English country threatened by a more insidious invasion, and hand down to posterity some unspoilt corner of Shakespeare's England, secure against the desecration or, as he says, the infection of the jerry-builder? Here surely the truest memorial of the tercentenary; the machinery is there in the shape of the National Trust, the country to be saved is omnipresent, the need for saving it is urgent. Let us join hands in this, remembering that small sums have their use as well as great, and our reward shall be the blessings of posterity and the sense that we have done our share in protecting and preserving in his name the land that Shakespeare loved:—

> This royal throne of kings, this sceptred isle,
> This castle of majesty, this seat of Mars,
> This other Eden, demi-Paradise;
> This fortress built by Nature for herself
> Against infection and the hand of war.

B

NOTES.

Charing Cross Bridge.

WE give an illustration of the well-thought-out proposal of Mr. Barclay Niven and Mr. Raffles Davison for the removal of Charing Cross Station to the southern side of the river and the resulting improvements which would be made possible thereby. We do not minimise the difficulties which lie in the way of the realisation of this great project, but we are entirely in sympathy with the endeavour of the London Society to procure the abandonment of the South-Eastern Railway Company's Bill for the strengthening of the existing monstrosity which spans the river and desecrates its beauty. Charing Cross Station is inconveniently placed and is an architectural eyesore, while it occupies an immensely valuable area. It is too early to discuss memorials which may be erected after the war, but the most fitting of all memorials, and the one most feasible in this country, is the accomplishment of a great work of public utility in a worthy manner, and such a new bridge, if architecturally treated, would be a most fitting memorial of the present titanic struggle, while it would be happily associated in position with Waterloo Bridge, which recalls to our minds the manner in which Europe was saved from the dangers which threatened it during the "Hundred Days."

Industrial Fatigue.

THE recent Memorandum issued by the Health of Munition Workers' Committee on Industrial Fatigue deserves consideration. Industrial fatigue may not be consciously felt by the worker, and yet may show itself in his work, and the Committee therefore consider the best tests that can be applied for discovering this latent fatigue. The output obtained is suggested as the best test if it is scientifically observed, both over short and long periods, and corrected for any variable factors. The effects of fatigue which has resulted in "over-strain" are of a more permanent nature, and affect capacity for periods far beyond the normal periods of rest, and the Committee therefore draw attention to the uneconomical policy of ignoring the requisite periods of rest, and observe that if the need for weekly rest had been observed earlier in the war a large part of the diminished capacity now being experienced would have been avoided. The Memorandum is a tribute to the patriotism of the munition workers, as their lessened capacity in many cases has been due to their strenuous efforts to maintain output despite their weakened physical condition. In a long war like the present this is a most important question, and the Committee dwell on the importance of maintaining efficiency by proper periods of rest; in fact, the report amounts to this, that a stitch in time saves nine, and that we in this country are behind some other countries in the application of physiological science to industrial conditions.

Liverpool Cathedral.

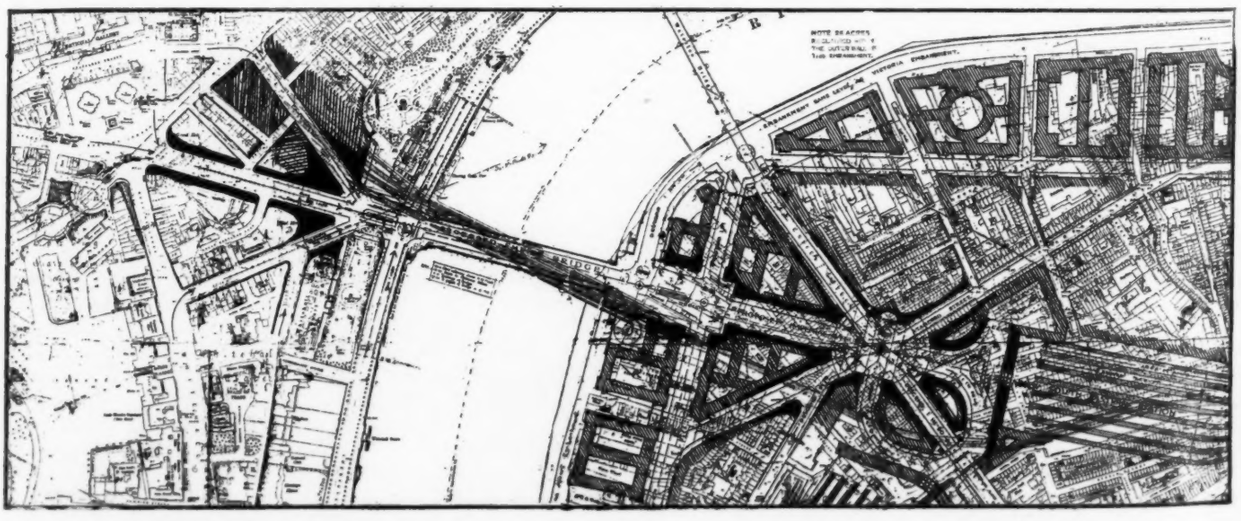
THE *Times*, in an admirably-written article entitled "The Mason's Way," describes the building of Liverpool Cathedral and the manner in which it recalls the procedure of the past, for the mason's way is what it was in the centuries which lie behind us and probably in the centuries which lie before us too. Modern invention has not created any method of replacing the mason's manual work, and the processes by which stone is prepared and dressed are what they were when the great cathedrals of the past were slowly created. The building of Liverpool Cathedral would have been a work of centuries; now it will probably be completed within a span of thirty years. Like the old cathedrals, the starting-point has been made with the choir, but unlike most of them the nave will be carried out on the lines originally contemplated. The critic of the *Times* considers that the east end of the Cathedral shows an advance in quality of design compared with the Lady Chapel, which is what we should expect, since the greater power of design possessed by an architect the more capable he is of learning by experience. We hope that the people of Liverpool will consider the adequate completion of their great building the most fitting memorial they can erect to commemorate those of their citizens who have fallen on the field of battle.

Breadsall Church, Derbyshire.

ALL SAINTS' PARISH CHURCH, Breadsall, in the vale of the Derwent and three miles distant from Derby, was destroyed by fire by Suffragettes in June, 1914; the tower and some portions of the outer walls only were saved. The fabric has just been reinstated at an outlay of nearly £9,000. The fine church, of which we published a drawing by Mr. J. Tarney in our number of September 22, 1900, has a chancel, nave, north aisle, and a tower with a lofty pointed spire, octagonal at the base; the south doorway in the nave is Late Norman, and the nave arcade of three bays, together with the rest of the structure, is Transitional or Early English; in the south side of the nave are square-headed Decorated windows; the east window, having five lights, is of the Perpendicular period. There were some ancient bench-ends of oak, sedilia of three bays, and in the chancel a monument (1802) to Erasmus Darwin, the physiologist and poet, who lived in the Priory, which was built in the sixteenth century upon the site of the Holy Trinity Priory, founded *temp.* Henry III., and was given by Edward VI. to Henry, Duke of Suffolk, in 1552.

The Civic Arts Association.

THE Civic Arts Association, whose foundation we were glad to record, draw attention to a list of prizes amounting to £205 which they are offering as premiums for the best designs submitted for eight classes of monuments, the prizes varying in amount from £50 to £2. As they state, there is a great need for a class of memorials which will be within the reach of those who have small incomes, and the Association hopes to put before the public designs and suggestions such as frames for Rolls of Honour and photographs, caskets for mementoes, and stands for holding medals. The conditions governing the competition will be sent to intending competitors who write to the Secretary at 28, Princes Gate, S.W., sending a postal order for 1s. and a stamped addressed envelope. The postal orders will be returned on receipt of a *bonâ fide* design. The Civic Arts Association are also prepared to offer the guidance of an expert advisory committee to public bodies or private individuals requiring such assistance. We hope that the Association will have every success in carrying out its programme, with the objects of which we are in complete sympathy.



Proposed Vehicular Bridge from Charing Cross, with Developments on either Side of River, including New South-Eastern Railway Station and South Side Embankment.

By Mr. D. Barclay Niven, F.R.I.B.A., and Mr. T. Raffles Davison.

THE LONDON CHURCHES OF WREN AND LATER ARCHITECTS OF THE RENAISSANCE.

No. XXIX.—St. Stephen, Coleman-Street.

THE church of St. Stephen, Coleman-street, replaces an earlier structure which perished in the Fire, and was used for long periods as a chapel to St. Olave, Jewry. The patronage of the living has since the time of Queen Elizabeth been in the hands of the parishioners. The existing church is markedly irregular in its plan and an example of Wren's disregard for symmetrical planning; the tapering form is much less apparent in reality than it is on plan. It contains some fine woodwork in the altar-piece and the doorcase on the north side of the chancel; but the lower part of the pulpit and the gallery with screen under are new and poor in design. The east window opening is filled in with a sacred picture which must be described as being a transparency rather than a window, and has a decided suggestion of the Baroque, which is also apparent in the very interesting gateway leading to the courtyard at the side of the church.

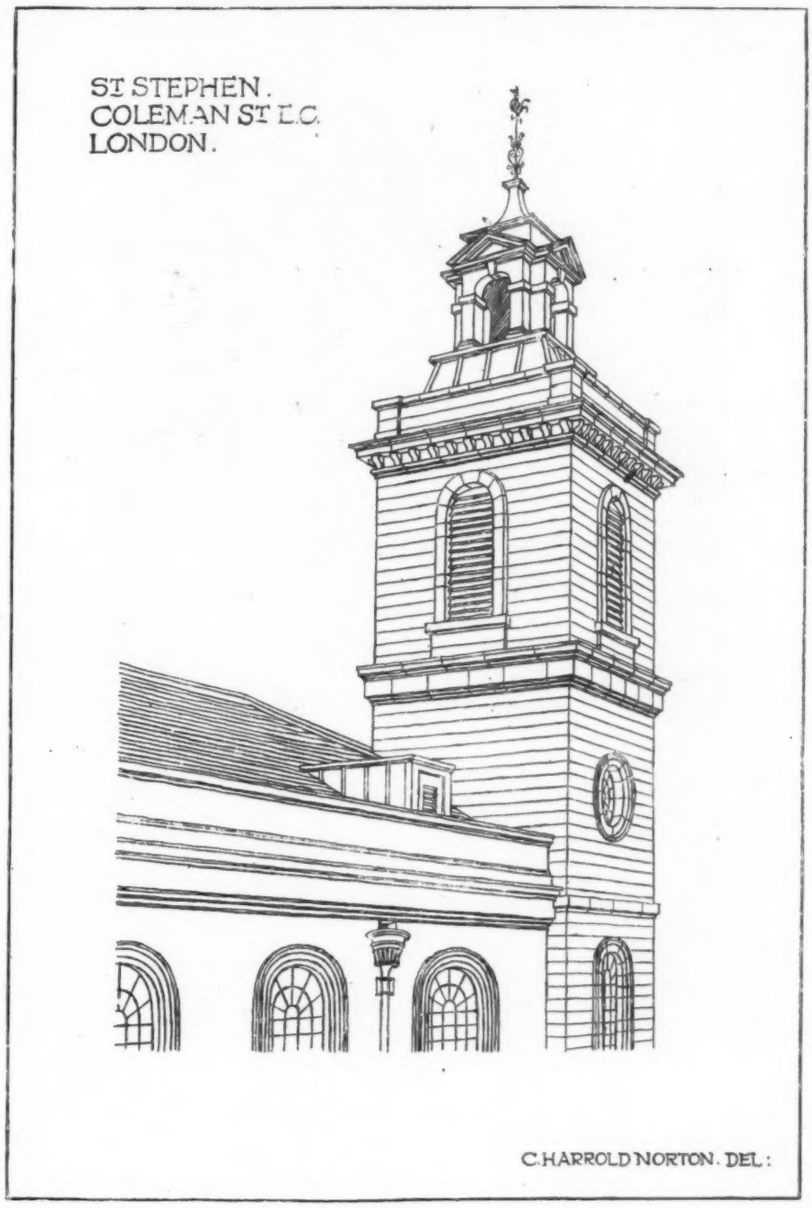
The carving over it, which is in high relief, represents the Day of Judgment, and the composition of the gateway forms a most picturesque incident in a London street, supplying the interest and vigour which is found abroad, and which the Baroque suggests better than any style before or after it. St. Stephen, Coleman-street, is one of the more interesting among the smaller and simpler of Wren's churches.

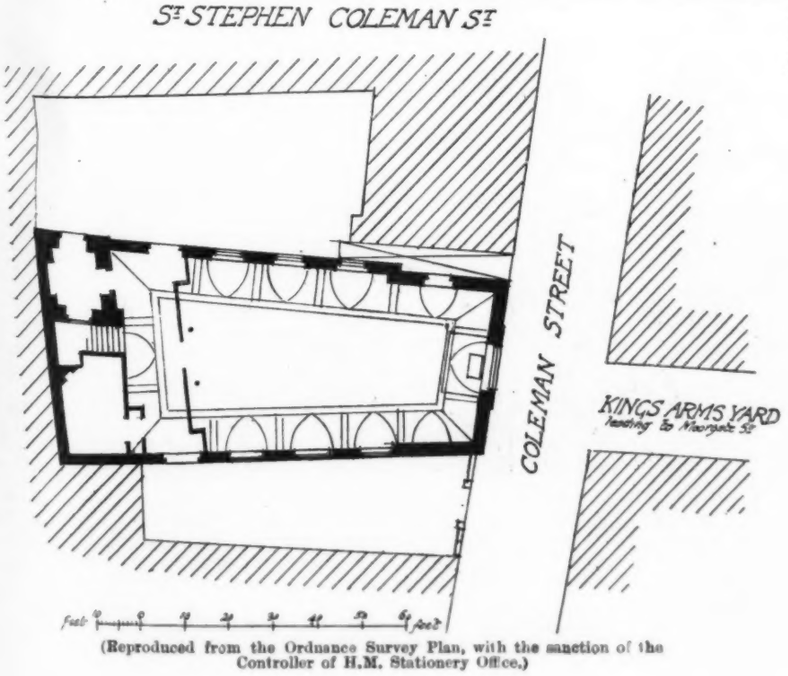
No. XXX.—St. Andrew-by-the-Wardrobe.

The church of St. Andrew-by-the-Wardrobe derives its name from its proximity to the King's Great Wardrobe, a house built by Sir John Beauchamp, Constable of Dover and Warden of the Cinque Ports, which was purchased, after his death, by King Edward III. and used as an office for the Keepers of the King's Apparel. The rectory is in the gift of the Mercers' Company, and with the parish is united that of St. Anne, Blackfriars.

The church, which cost £7,000 to build, was completed in 1692. The exterior is not remarkable architecturally, though a simple and appropriate expression of the galleried interior. Internally it is among the most pleasing of Wren's churches, though exceedingly simple in character. The segmental ceiling rests on square nave piers, which are panelled from the gallery level downwards. The intersecting plaster groins which form the ceiling over the aisle are very pleasing in effect, the curves of which they are composed cutting slightly into the main segmental ceiling over the nave. The organ-case and woodwork generally are well designed and in a good state of preservation. Among Wren's churches this is one which has been least spoiled by additions or alterations and therefore better conveys the designer's intention than many other of his churches do.

There are a few monuments, characteristic of the manner of the later part of the eighteenth century and early nineteenth century, at the ends of the side aisles, erected in honour of three successive rectors—the Rev. William Romaine, who died in 1795; the Rev. William Goode, who died in 1816; and the Rev. Isaac Saunders, who died in 1836.





(Reproduced from the Ordnance Survey Plan, with the sanction of the Controller of H.M. Stationery Office.)

HISTORIC CATHEDRAL DESTROYED.

It is stated that a violent fire broke out at Andria, near Bari, and almost completely destroyed the Cathedral there. The fire spread as far as the Bishop's Palace. The dwellings near by are in danger.

THE ROYAL ACADEMY SUMMER EXHIBITION.

As the Galleries are not required for the annual dinner, which will not take place this year, the President and Council have decided to make the cards of invitation to the private view available for either Friday, April 28, or Saturday, April 29, from 10 a.m. to 7 p.m. The public will also be admitted to the exhibition on Saturday, April 29, on paying an entrance fee of 5s.

THE SURVEYORS' INSTITUTION:

TOWN PLANNING.

In our last issue we gave the first part of a paper read by Mr. W. R. Davidge at the Surveyors' Institution on the 10th inst., entitled "The Principles and Position of Town Planning." We now give a further part of this interesting lecture.

Zone System and Commercial Districts.

"The division of a district into building zones in which different building regulations apply has not found favour in English practice, although separate districts for buildings of the warehouse or factory class have been adopted at both Ruislip and Birmingham.

From the point of view of protection of property-owners in residential districts, some form of restraint as to the location of commercial buildings is clearly necessary, and, so far as the Act has gone, the constitution of separate areas for factory and commercial purposes has been carried out without difficulty.

As so many of us are aware, however, the real test of such restrictions will be felt in the next generation. With the continual growth and prosperity of a town the commercial area will surely expand, and unless adjacent space is provided for expansion the business side of the town will necessarily overflow into the residential quarters. In all old centres this alteration of use is continually before our eyes. In New York, within the last few years, business which formerly was done in Twenty-third-street has now moved up as far as Forty-second-street, and an entirely new shopping district created.

Even in London the one-time quiet residential Hanover-square is rapidly assuming a commercial character, and the once peaceful quiet of Soho-square has long been broken into by the pickle factory. Such changes are in the nature of things, and, however hard and fast the restrictions of a town-planning scheme may be drawn, it is evident that unless the plan itself also provides for extension mere legal restrictions will have no more force than the out-of-date paper restrictions of many one-time high-class residential estates, more honoured in the breach than in the observance.

Provision must therefore be made for the gradual expansion of commercial districts.

The phenomenon of the overflowing of business into the residential areas of a town is constantly before our eyes, but it is curious to note that in nearly all towns, no matter how old, the heart of the business community still has its nucleus in the area of the original settlement. No matter how Oxford-street or Kensington High-street may flourish, the City of London still holds its own so far as the business community is concerned. The same is true of New York, where the nerve centre is still in the original commercial settlement at one time bounded by Wall-street.

Increased Height of Business Premises

It is the endeavour to crowd as many office buildings as possible near this commercial centre that has created the "skyscrapers" of Lower New York. This tendency towards increased height of buildings in commercial centres is equally noticeable in such cities as Sydney, Melbourne, Winnipeg, Vancouver, and even in comparatively small cities like Regina. *There is everywhere a tendency to increased height of business premises.*

Control of Building Heights.

The New York authorities have given much consideration to the important question of regulating the height of buildings. In Lower Manhattan there has for many years been a growing tendency towards the erection of tall "skyscrapers," mostly office buildings. The excuse for this has been the limited area available in the older commercial quarter of the city, but the real purpose has in many cases probably been for advertisement purposes. The Woolworth Building at present easily holds the record. When I visited the Woolworth Building I entered the lift, and was carried up by express "elevator" to the fifty-first story. Then I changed lifts and went up another four stories—fifty-five stories in all. As an investment, however, hardly any of these tall buildings pay. Such buildings, too, only add to the existing congestion, and, to emphasise this point, it is stated that if the 10,000 occupants of the Woolworth Building all left off work to go home at one time by the nearest electric railway it would take the railway's full capacity for twenty-two minutes to get them all away—and this from only one building. The City of New York is already spending some £73,000,000 in the construction of electric subways, and in the interests both of economy and public health the city has now decided to discourage the erection of buildings above a reasonable height.

In this connection the Report of the Heights of Buildings Commission for New York City gives some interesting information, proving conclusively that the very tall building is not a paying proposition:—

"The cost per cube foot for a skyscraper is given as 2s. 6d. to 3s. 1½d. (60 to 75 cents), as compared with 1s. 8d. to 2s. 1d. (40 to 50 cents) per cube foot for a low building of the same class. The loss of space on the ground floor taken up by the thirty or so lifts, and as much more for the necessary lobbies, is even more serious. Ground floor space in such buildings often rents at £4 per square foot ($20), and the loss of something like 4,000 sq. ft. of floor space means an annual loss of £16,000 on this floor alone. A ten-story building would sa e two-thirds of this. The loss on the upper floors, due to the space taken up by lifts, etc., also amounts to a surprising total. This means that tall buildings reach a limit beyond which the loss in space on the lower floors more than counterbalances the profit on the upper floors. Every building, according to its shape, size, location, and use, has its economic limit.

Even though a high building may pay a moderate return as long as it stands alone, and is surrounded only by low buildings, so that all its floors are light and attractive, the result is bound to be very different after it is surrounded by similar buildings, shutting off light and reducing rentals on the lower floors."

In the interests of traffic facilities, public health, and public economy the height of buildings should be kept within reasonable limits.

It is interesting to note, however, that even in Central New York (Manhattan) the average building height is still only 4·8 stories. The buildings over ten stories constitute only 1·11 per cent. of the total. Out of 92,749 buildings in Manhattan there are only 1,048 buildings over ten stories in height; ninety buildings over seventeen stories in height; fifty-one buildings over twenty stories in height; nine buildings over thirty stories in height.

Limits of Height.

The *limits of height of buildings* in various cities are at present as under:—

London.—80 ft.

Paris.—In streets less than 40 ft. wide, street width + 20 ft. In streets over 40 ft. wide, 58·64 ft. + ¼ (width — 40 ft.).

Berlin.—Maximum 72·2 ft. (22 mètres).

Boston.—District A, 125 ft., or 2½ times width of street. District B, 100 ft., or 1½ times width of street. (Buildings over 80 ft. only allowed on streets over 64 ft. wide.) Special restriction to 70 ft. on blocks adjoining State House.

Washington.—Pennsylvania-avenue.—160 ft.; other business streets, 130 ft., or street width + 20 ft.; residence streets, 85 ft.; or streets over 70 ft. wide, street width + 10 ft.; streets 60 ft. to 70 ft., 60 ft.; streets less than 60 ft., street width.

Other American Cities.—Baltimore, 175 ft.; Chicago, 200 ft.; Los Angeles, 150 ft.; Salt Lake City, 125 ft.; Toronto, 130 ft.

New York.—Limit of height of apartment and tenement houes, 1½ times street width.

The New York Commission recommend the limit of height for all buildings within 100 ft. of Fifth Avenue to be 125 ft., and that the general restriction for residential districts should be 1½ times street width, *i.e.*, for 60-ft. streets height would be 90 ft., and for business streets 2 times street width with maximum of 300 ft. A number of American cities, including Baltimore, Milwaukee, Minneapolis, and Los Angeles, have in recent years established separate residential and industrial districts.

Limitation of Houses per Acre.

In England, although land values in our towns have reached a considerable height, there has been no great demand for very tall buildings, and it is probable that the present height limits, where established, are sufficient to check this tendency. The limitation of the number of houses per acre has, however, been enthusiastically taken up in this country. The effect of such a limitation must be at least two-fold. It tends first to spread the town, and consequently the values, over a larger area, and by restricting the use to which land is put must to that extent decrease the value per acre of land which is already ripe for building. At the same time it will tend to give a corresponding increase of value to land further from the town. Its effect on the already over-built city areas cannot fail to be beneficial, for by fixing a standard of suburban development—a high standard of amenity and a comparatively low standard of price—it will be financially impracticable to force up values in the built-up areas above a reasonable limit, and for the same reason it will not pay to unduly increase the congestion of building. The difficulties of fixing a suitable "land unit" are, however, considerable, and both the Ruislip and Birmingham systems are worthy of study in this respect.

Twelve houses to the acre is a reasonable maximum, but where land is already being developed for cottage property as many as eighteen to twenty houses per acre have been allowed in the case of the first two Birmingham schemes. In any case it is evident that some discretionary power to exceed the limit in particular cases or particular parts of an estate will certainly be taken in practice. Given common sense, however, in both the landowner and the municipality, no difficulty should arise in administering an admittedly difficult point.

In some of our colonies, notably in Queensland and in New Zealand, there has for many years been a statutory limitation of the minimum size of plot which can be bought or sold, and in both colonies this has been fixed at 16 perches, or 1-10th of an acre. This practical limitation of ten plots to the acre has, however, been largely dictated by land registry considerations, and there is no restriction on the number of buildings per acre. In the Colonies, where nearly every house has its quarter acre, the need has not yet been felt for restriction, but it is remarkable how, even in the Colonies, all large blocks are continually being subdivided into smaller and smaller parcels.

THE CAUSES OF DEVELOPMENT.

Influence of Geographical Position.

There is a reason for most things, and not least for the position of towns where they exist. In most cases the community has grown up either because of some natural advantage—the possession of a coal mine, or a well, or a spring, or a ford across a river, or a hill for defensive purposes, or because of its position at a road junction, or along some important line of route.

The commercial success of the town is no less dependent upon a continuation of these conditions. The weekly market perhaps attracts business; the opening of a factory or a new industry brings an influx of people, but the causes which operate to bring about this prosperity are deep set in the natural, geographical, and strategical position of the town.

Private residents will not be attracted to a town which is a blot on the landscape, and businesses will not come unless there is business to be done. Any town plan, therefore, for the development of a town must *aim first at making the utmost of all such natural and geographical advantages, and then at guiding the development into the most advantageous lines for the benefit of the town and its residents.*

Transit Facilities.

The provision of efficient and up-to-date means of transit is one of the most important items in the development of towns; yet, strange as it may appear, this all essential detail is omitted from the calculations of many would-be town-planners.

On more than one occasion during my recent visit to the Colonies I was asked to advise as to the lay-out of estates or townships many miles

away from any existing community, with no special *raison d'être* of their own, and which under hardly any circumstances could become self-supporting and self-contained. It is evident that, *in the absence of any special commercial or natural advantages, or of facilities for easy communication with existing centres, a community cannot expect development.*

It must not be thought from this that any new "garden cities" cannot be created, but they can only be successfully created if they can secure enough commerce or industry to make them self-supporting, or if they are linked up to existing communities by easy and rapid transit of some description, so that the new community can serve either as a branch industry or as a health resort or dormitory to one or more existing towns. *Rapid transit, therefore, is all-important to the success of any town*

In America, where distances are so immense, the transit question inevitably bulks largely, but especially in recent years American towns have given more and more attention to the problem of the quick distribution of passengers from the outlying districts to and from the central or business portions of a town.

"Rapid transit" is therefore one of the first considerations of our American cousins in considering the problem of town development, and it is indeed strange that we in this country are only dimly beginning to realise this in our struggles after new and improved arterial roads. *Main roads and motor traffic are, however, only one part of the problem,* and in America many experts are giving their attention to the solution of the transit problem as a whole."

Rapid Transit.

One of the most useful investigations in this direction, and one which has been of great service as an example to other towns, was that made by the Philadelphia Transit Commissioner in 1913, and his report gives a most exhaustive and comprehensive survey of the transit problem, so far as Philadelphia is concerned. Special study has been given to the transit question in the United States generally, and especially of its effect on town development.

It is naturally found that property in the neighbourhood of a "rapid transit line" develops more rapidly than other parts of the town, and if only one such line exists it will naturally absorb the greater part of the normal growth of the town.

The question of the amount of traffic to justify the construction of a tube railway or tramway subway will depend upon local geographical and commercial conditions, but it is a curious fact that, so far as this country is concerned, no town with a population of less than half a million has ventured to introduce a tube railway or electric "rapid transit" line.

On various parts of the Continent there have been running for some years now a combination of electric light railway and tramway which may have far-reaching results. Many of these are apparently ordinary tramcars and trailers so long as they are in the town, but as soon as they reach the outskirts they travel on a special track of their own. With stops five miles or so apart an average speed of upwards of thirty miles an hour is easily obtained. This system has already proved of great value in bringing passengers and country produce into the cities, and would be of great service in distributing populations if its use were more widely practised.

Trams on special tracks of this description are to be seen in the outskirts of Sydney, and also, of course, in many parts of Holland, though in both these cases the stops are too frequent to obtain the full use of rapid transit facilities.

A most concise and comprehensive report on "The Passenger Transportation Problem" is that recently issued by the General Manager of the Manchester Corporation Tramways, and forms an excellent summary of what has so far been achieved in this direction in America and the principal cities of the Continent.

There is, however, still a wide field for investigation as to the methods of transit most suitable for particular localities, and it is clearly not possible to do more than generalise one or two principles upon which most authorities are agreed :—

(1) Electric "subways" or *tube railways can only be commercially successful where the traffic is large and constant.* Sub-surface railways are therefore only suitable for communities with a population of over half a million or more. Overhead railways are almost equally costly as tubes, and by reason of their noise and ugliness are generally regarded as unsuitable to English conditions.

(2) *Tramways and motor omnibuses are of more service when run in conjunction with rapid transit lines.* In Boston, U.S.A., tramway subways, somewhat similar to that under Kingsway, have been in operation for some years, but, owing to its narrow streets and congested site, the problem in Boston is a very special one.

(3) *Special tracks should, if possible, be provided for tramways,* particularly outside the built-up areas. Special tramway tracks on wooden sleepers laid in grass have been very successful in many parts of the Continent, and they are now being introduced in the new arterial roads recently constructed in the outskirts of Liverpool.

Arterial Roads.

For many people town planning begins and ends with the planning of roads, and there can be no gainsaying that the main roads into and out of a town are the skeleton on which the plan will hang together. They may, in some instances, be the "bones of contention," but all will be in agreement with the general principle of fixing the routes needed for new main roads, including, of course, reasonable circumferential and cross-roads. *The routes for arterial roads should be laid down at an early stage in the town plan, and definitely secured or sterilised from other uses.*

It is remarkable how many of our large towns are now considering this problem of arterial roads. There is evident, too, in this country a tendency towards "circular roads" in addition to radial routes, which, however, must always take the bulk of the traffic. Liverpool has already constructed a fine circumferential boulevard. Birmingham has prepared a scheme showing a circumferential road 100 ft. wide practically encircling the city. The London Traffic Branch of the Board of Trade has also given very considerable attention to this matter, and the conferences of municipal authorities in Greater London have, with the assistance of this Institution and other professional bodies, at last agreed upon a comprehensive scheme of main arterial and circumferential roads for Greater London, the total length of the proposed roads approximating a hundred miles. The financing of the proposals where so many authorities are concerned is, however, a difficult matter, and the signs all seem to point to the necessity for making main roads a national matter. In most other countries "*routes nationales*" have long been an accomplished fact, and the importance of the national point of view must not be lost sight of.

The Road Board established by the Government for this purpose is a recognition of this principle, and it is to be hoped that in the stress of these stormy times the principle of national responsibility for the "King's highway" will continue to be maintained. *Main roads are the property of the nation and should be a national matter.*

Roads and Road Widths.

Much discussion and many conferences during the past six years have taken place on the question of road widths and construction, especially perhaps as to the allocation of space for various classes of traffic.

The general principles arrived at may, I think, be reasonably summarised as follows :—

To secure easy and rapid transit—

(1) *Classification of roads is desirable.*

(2) *Provision for fast and slow traffic (fast traffic should not have to slow up for cross-traffic), and separate tracks for tramways.*

(3) *Sufficient width of roadway for the traffic, but not too wide to be maintained.*

(4) *Sufficient width between buildings for all future purposes.*

To secure the amenity of the highway—

(1) Good views from the road—preserving view points.

(2) Good views of the road—trees, but not too thickly planted.

(3) Pleasant walks alongside the road—grass and trees where possible.

(4) Pleasant halts by the way—an occasional village green or open space.

It should be borne in mind that *estate development is not necessarily an object of main roads.*

And in the lay-out of estates the principles laid down in my paper at this Institution six years ago still hold good, viz. :—

(1) Main routes must take the direction required by the traffic and contour of the ground.

(2) Geometrical planning is not necessarily satisfactory.

(3) Long straight streets, when adopted, should have a definite motive.

(4) Slight curves or irregularities in frontage lines and building lines may often be adopted with advantage.

(5) Line of sight should in most cases be restricted within reasonable limits.

Relaxation of By-laws.

A very important point on which most people are now agreed is, that, *while it is desirable to have a minimum distance between the building lines, a hard-and-fast by-law width is undesirable* whether it be 40 ft. or 50 ft. (or 66 ft. as in the Colonies).

The power to fix building lines is important.

The width of macadam or roadway paving provided should be dictated by the use to which the street is put.

In residential streets the remaining width available may reasonably be devoted to grass margins and tree planting.

The *relaxation of by-laws,* allowed by the Act to be introduced into town-planning schemes, may also in some cases be usefully applied to the by-laws dealing with buildings. The by-law, for instance, requiring party-walls to be carried above the roof, might in most cases reasonably be waived, and there is also something to be said for the suggestion that in country districts wooden buildings might be permitted subject to reasonable restrictions Even under the London Building Act it is possible to build a wooden house provided it is 30 ft. from the adjoining property or any other building, and it should be at least possible to do the same in the country.

Internal Improvements.

For some years now it has been felt *that there should be some means of extending the principles of the Town Planning Act to the internal or built-up area of towns,* but many difficulties confront us in this direction, and it is probable that for some years to come internal street improvements will have to be the subject of special enactment in each case.

Some extension to the whole country of the principles of the Metropolitan Paving Act, 1817 (*Michael Angelo Taylor's Act*), by which local authorities in London can by simple resolution purchase land for street improvement, *would undoubtedly greatly simplify the procedure of local authorities.*

Compulsory Town Planning.

Another point which has been much discussed is as to the desirability or possibility of making town planning compulsory, and it is probable that all will be agreed that *the time has not yet come for compulsory town planning.*

In Massachusetts and other States the appointment of a town-planning board is compulsory for all towns with a population of over 10,000. In Canada the Nova Scotia Town Planning Act, passed in April, 1915, makes town planning compulsory for the whole of Nova Scotia, and this experiment will be watched with interest.

Progress in the Colonies and India.

The other Canadian Provinces which have adopted special town planning Acts are New Brunswick and Alberta in 1912. It is probable that the remaining provinces will shortly follow suit, and the same may be said of the various Australian States and the New Zealand Government. In India the Bombay Government has already led the way in this respect.

(To be continued.)

List of Competitions, Contracts, etc.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this number: Competitions, —; Contracts, —; Public Appointments, —; Auction Sales, xvi. Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

***** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.**

Contracts.

BUILDING AND PAINTING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

APRIL 20.—**Walker-on-Tyne.**—PAINTING.—The Walker Co-operative Society, Ltd., Lamb-street, Walker-on-Tyne, invite tenders for the painting of the Society's business premises and dwelling-house property situate in Lamb-street and Wharrier-street, Walker; also their business premises and dwelling-house property situate in Welbeck-road. Specifications, etc., at the office, Lamb-street, Walker.

APRIL 21.—**Huntingdon.**—WALL.—For the re-building of a wall at the Huntingdon Workhouse. Particulars from the Master.

APRIL 22.—**Lowca.**—HOUSES.—For the erection of two dwelling-houses in Stamford Hill-avenue, Lowca, for the Harrington Coke Ovens Company, Ltd. Plans and specifications can be seen at the office of Mr. Charles W. Eaglesfield, architect and surveyor, Gordon-street, Workington.

APRIL 22.—**Wexford.**—COTTAGES.—For building nine single labourers' cottages for the R.D.C. Particulars of the Council's Engineers, Messrs. Donnelly & Moore, 36, Nassau-street, Dublin, or of Mr. Nicholas Kehoe, Clerk of Council.

APRIL 27.—**Navan (Co. Meath).**—CONVERTING.—For converting the military barracks at Navan, Co. Meath, into a school and residence for the De La Salle Brothers. Plans, etc., can be seen at the Presbytery, Navan, with the Administrator, the Rev. J. J. Poland, or at the office of Messrs. William H. Byrne & Sons, architects, 20, Suffolk-street, Dublin.

APRIL 28.—**Abersychan.**—GARAGE, ETC.—For the erection of a garage and stables situated in "Steep Field," Abersychan, near Pontypool, for the Abersychan Co-operative Society, Ltd. Plans, etc., of Mr. C. F. J. Wilton, architect and surveyor, Midland Bank-chambers, Pontypool.

MAY 1.—**Cwm.**—HOUSE.—For the erection of caretaker's house at Duffryn Schools, Cwm, for the Ebbw Vale E.C. Plans, etc., on payment of £1 deposit in P.O.'s, of Mr. T. J. Thomas, the Town Surveyor.

MAY 1.—**Wigan.**—EXTENSIONS.—For an extension of the Market Hall. Specification, etc., of Mr. A. T. Godseman, Borough Engineer, King-street West, Wigan.

MAY 2.—**Bradford.**—PLUMBING.—The Bradford Corporation invite tenders for plumbers' work required in the erection of sanatorium buildings at Grassington. General conditions of contract, etc., of the City Architect, Town Hall, Bradford.

MAY 4.—**Langley Moor.**—CEMETERY EXTENSIONS.—For the construction of boundary walls, iron railing, drainage, and road-making in connection with Waterhouses Cemetery, for the Brandon and Byshottles U.D.C. Particulars of Mr. Geo. G. Donkin, Surveyor, Langley Moor.

FURNITURE, MATERIALS, etc.

APRIL 20.—**Govan.**—MATERIALS.—Supply to the Govan Combination P.C. and Govan District Board of Control of builders' materials, etc. Forms of tender, etc., of the Subscriber, Mr. John Mitchell, Inspector and Clerk, 7-8, Carlton-place, Glasgow.

APRIL 24.—**Lochgilphead.**—PAINTS, ETC.—Supply to the Argyll and Bute Asylum, Lochgilphead, for twelve months from May 15, 1916, of paints and oils, timbers, etc. Schedules to be had on application.

APRIL 26.—**Cork.**—PAINTS, ETC.—Supply to the Cork Harbour Commissioners of paints and oils, nails, screws, and files. Forms at the Engineer's Department, Harbour Commissioners' Offices, Custom House-street, Cork.

APRIL 29.—**Glasgow.**—MATERIALS.—Supply to the Corporation Hospitals Department of plumber, engineer, and joiner materials. Forms of specifications from the House Steward at the Hospital, Belvidere, London-road

ENGINEERING, IRON, AND STEEL.

APRIL 21.—**Dundee.**—STEEL WORK.—For the execution of steel work for the erection of store at Dudhope Crescent-road, Dundee, for the Corporation. Schedules of quantities, etc., of Mr. H. Richardson, M.Inst.E.E., General Manager and Engineer, Electricity Department, Dundee.

APRIL 21.—**Dundee.**—STEEL WORK.—For the execution of steel work of roof principals for contractor house, No. 2 pump room, Carolina Port, for the Corporation. Schedules of quantities of Mr. H. Richardson, M.Inst.E.E., General Manager and Engineer, Electricity Department, Dundee.

APRIL 26.—**Walthamstow.**—WATER SOFTENING PLANT.—Supply to the U.D.C. Electricity Department of a water softening plant. Specification, etc., from Mr. G. R. Spurr, Electrical and Tramways Engineer, Priory-avenue, Walthamstow. Deposit, £1.

APRIL 26.—**Warrington.**—BOILER PLANT, ETC.—The Electricty and Tramways Committee invites tenders for the following:—(1) Boiler plant; (2) economiser. Specifications, etc., of Mr. F. V. L. Mathias, Borough Electrical and Tramways Engineer, Howley, Warrington Deposit, £1 1s.

APRIL 27.—**Dublin.**—CARRIAGE UNDER-FRAMES.—The Great Northern Railway Company (Ireland) invite tenders for twelve steel carriage underframes, 58 ft. long. Copies of the specification, etc., of the Secretary at Amiens-street Terminus, Dublin. Deposit, 10s.

APRIL 28.—**London.**—HEATING ACCESSORIES.—The Commissioners of his Majesty's Works, etc., invite tenders for the supply of steam and hot-water heating accessories, etc. Forms of tender, etc., of the Controller of Supplies, H.M. Office of Works, King Charles-street, Westminster, S.W.

APRIL 28.—**West Hartlepool.**—EXTENSION OF BOILER PLANT.—Erection of a circular brick chimney shaft, 100 ft. in height, in connection with the Electric Power Station, adjacent to the Seaton Carew Ironworks, for the Corporation. Plans, etc., of Mr. Nelson F. Dennis, M.Inst.C.E., Borough Engineer, Municipal-buildings.

ROAD, SANITARY, AND WATER WORKS.

APRIL 26.—**Birmingham.**—TAR MACADAM.—For coating with tar macadam the carriageways of certain portions of roads, having a total length of about ten miles, together with other work connected therewith, for the Public Works Committee. Drawings, etc., of Mr. Henry E. Stilgoe, M.Inst.C.E., City Engineer and Surveyor, The Council House, Birmingham. Deposit, £2.

APRIL 26.—**Felling.**—PAVING, ETC.—For paving, channelling, sewering, kerbing, and concreting of back streets at the rear of Smokey-row and Sunderland-terrace, Wardley. Plans, etc., of the Surveyor, Council Buildings, Felling-on-Tyne.

APRIL 26.—**Kent.**—RAG AND BLOCK STONE.—Supply to the Justices and Commissioners of Sewers for the limits extending from Gravesend Bridge to Sheerness, and thence along the River Medway to Penshurst in Kent, of good ragstone, free from hassock, and large block stones. Mr. E. L. Baker, Clerk to the Commission, Bank-chambers, Rochester.

APRIL 26.—**London.**—GRANITE.—Supply to the Lambeth B.C. of broken granite. Mr. Bruce Penny, Town Clerk, Lambeth Town Hall, Brixton-hill, S.W.

APRIL 27.—**Dublin.**—GRAVEL, ETC.—Supply of pit gravel and pit sand for the Corporation. Specifications, etc., from the City Engineer, 28, Castle-street, on payment of 1s. for each form.

Auction Sales.

* MAY 2.—**Stoke Newington.**—Messrs. Fisher, Stanhope, & Co. will sell by auction, on the premises, the stock of a builder, contractor, and decorator.

* MAY 10.—Messrs. Churchill & Sim will sell by auction, at the Great Hall, Winchester House, Old Broad-street, E.C., an assortment of deals, battens, boards, timbers, etc.

* MAY 23.—**Rotherhithe.**—Messrs. Daniel Smith, Oakley, & Gerrard will sell by auction, at the Mart, a Thames-side warehouse and factory premises.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to THE BUILDER LTD., and *not* to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

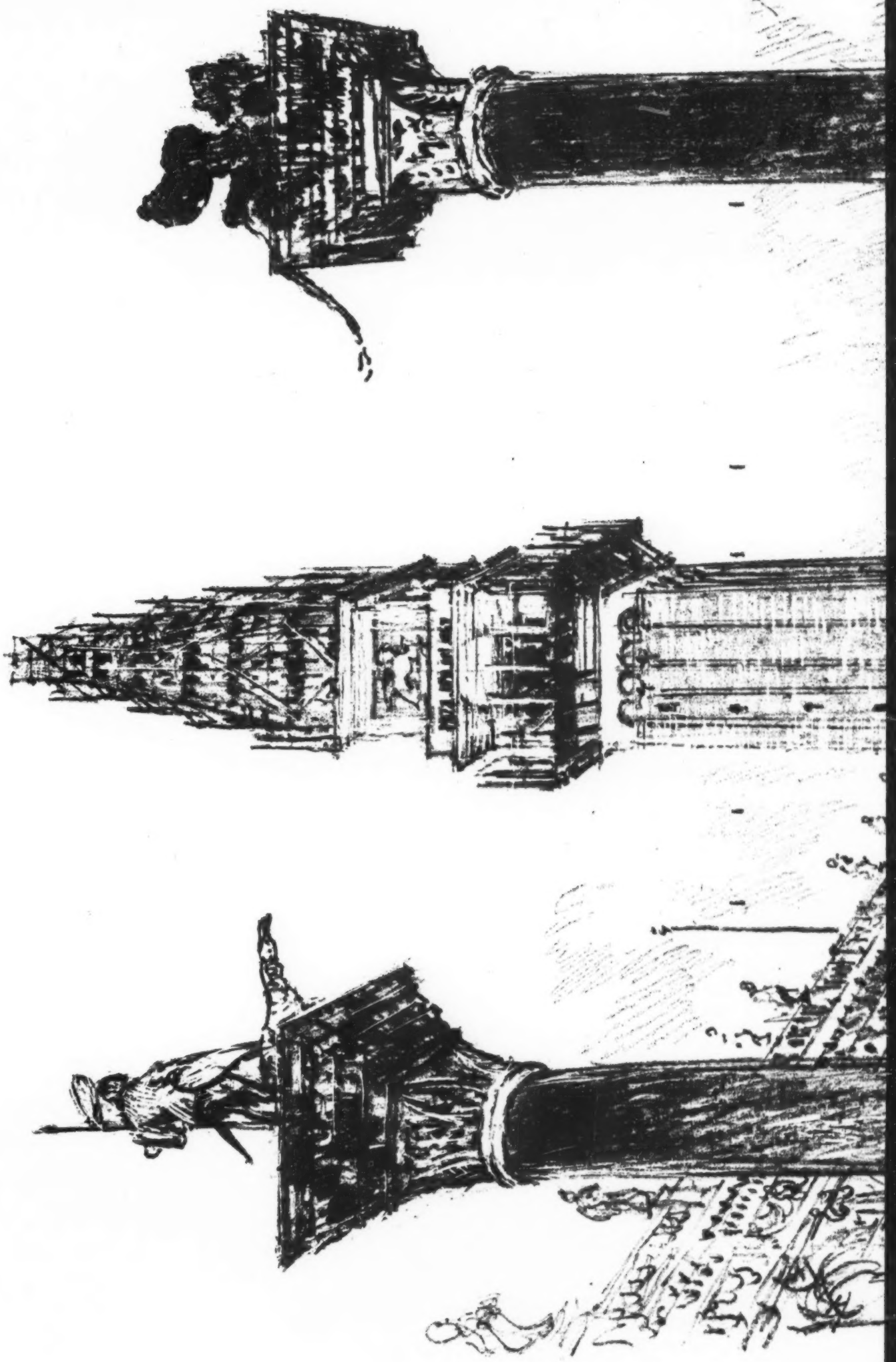
We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples sent to or left at this office, unless he has specially asked for them.

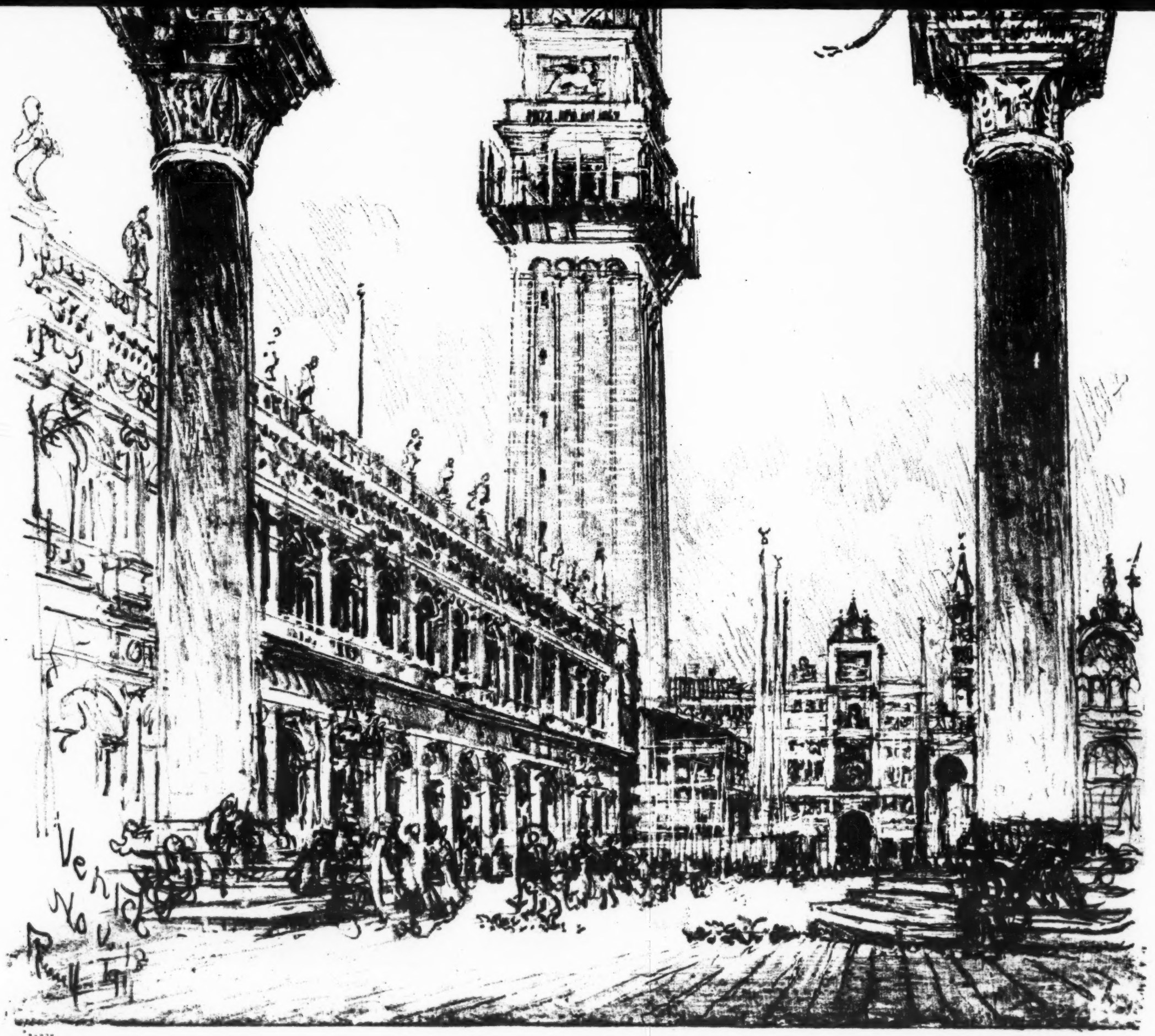
All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

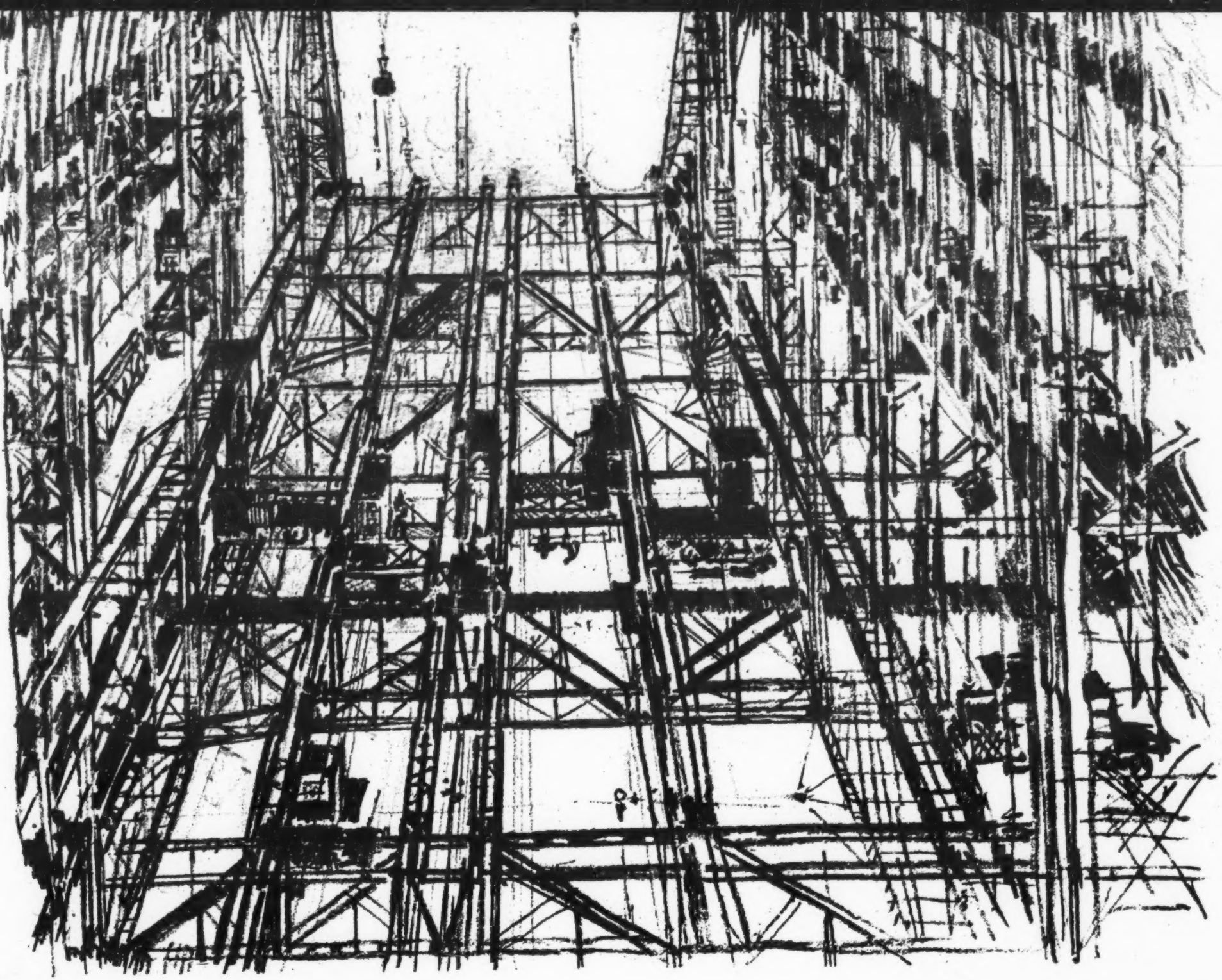
N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

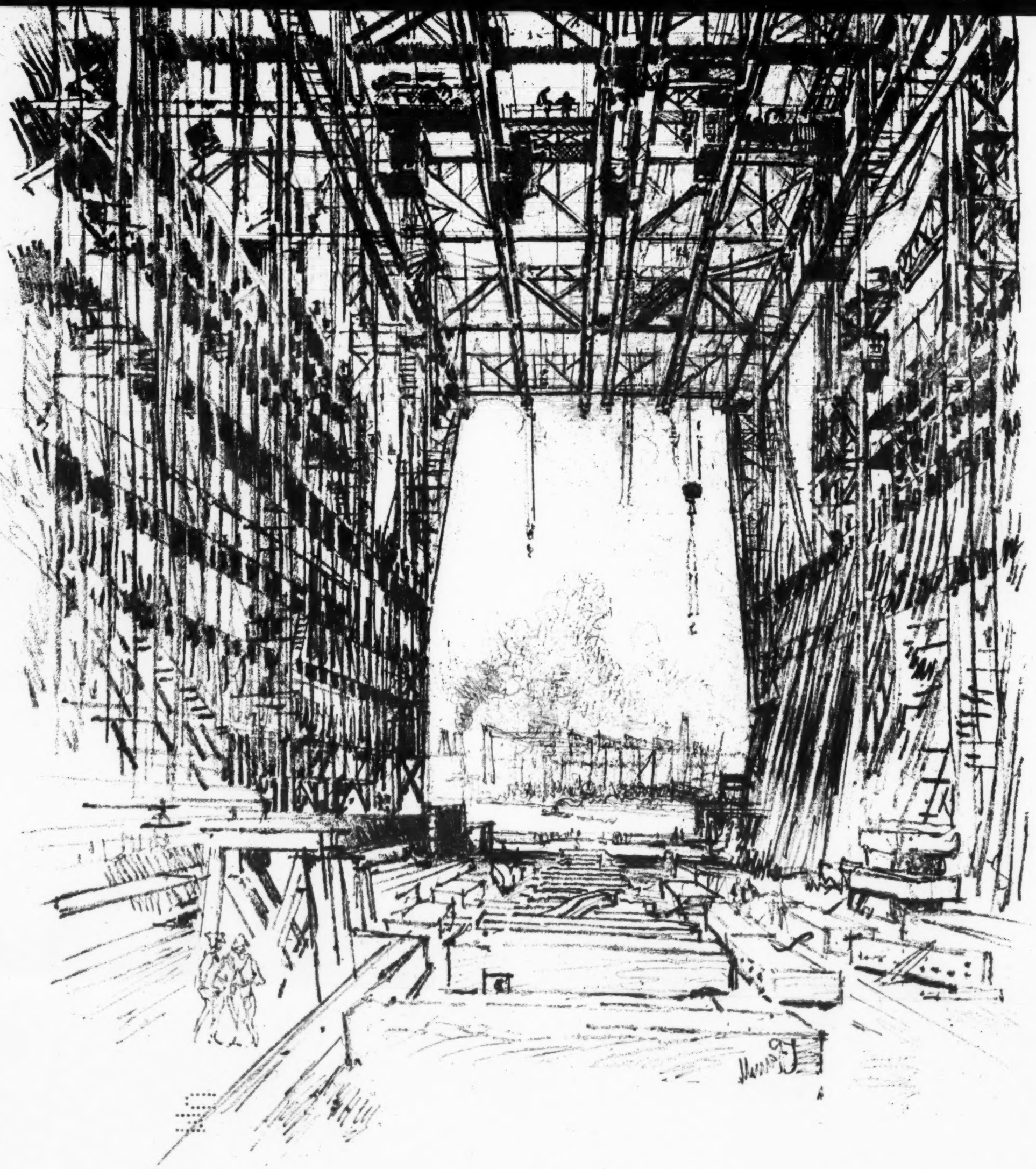
[Those with an asterisk (*) are advertised in this issue.]



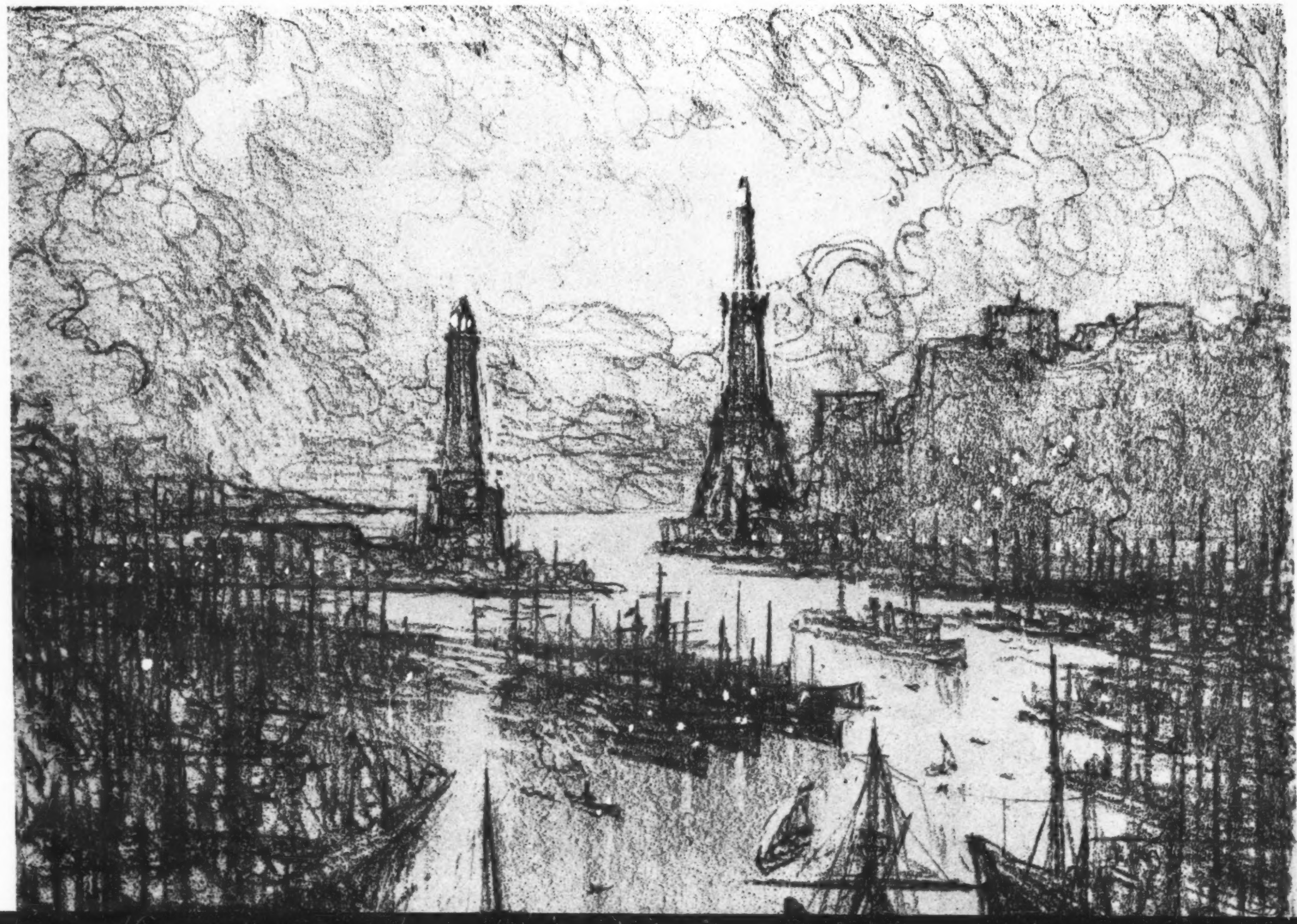


VENICE.—From a Lithograph by Joseph Pennell.

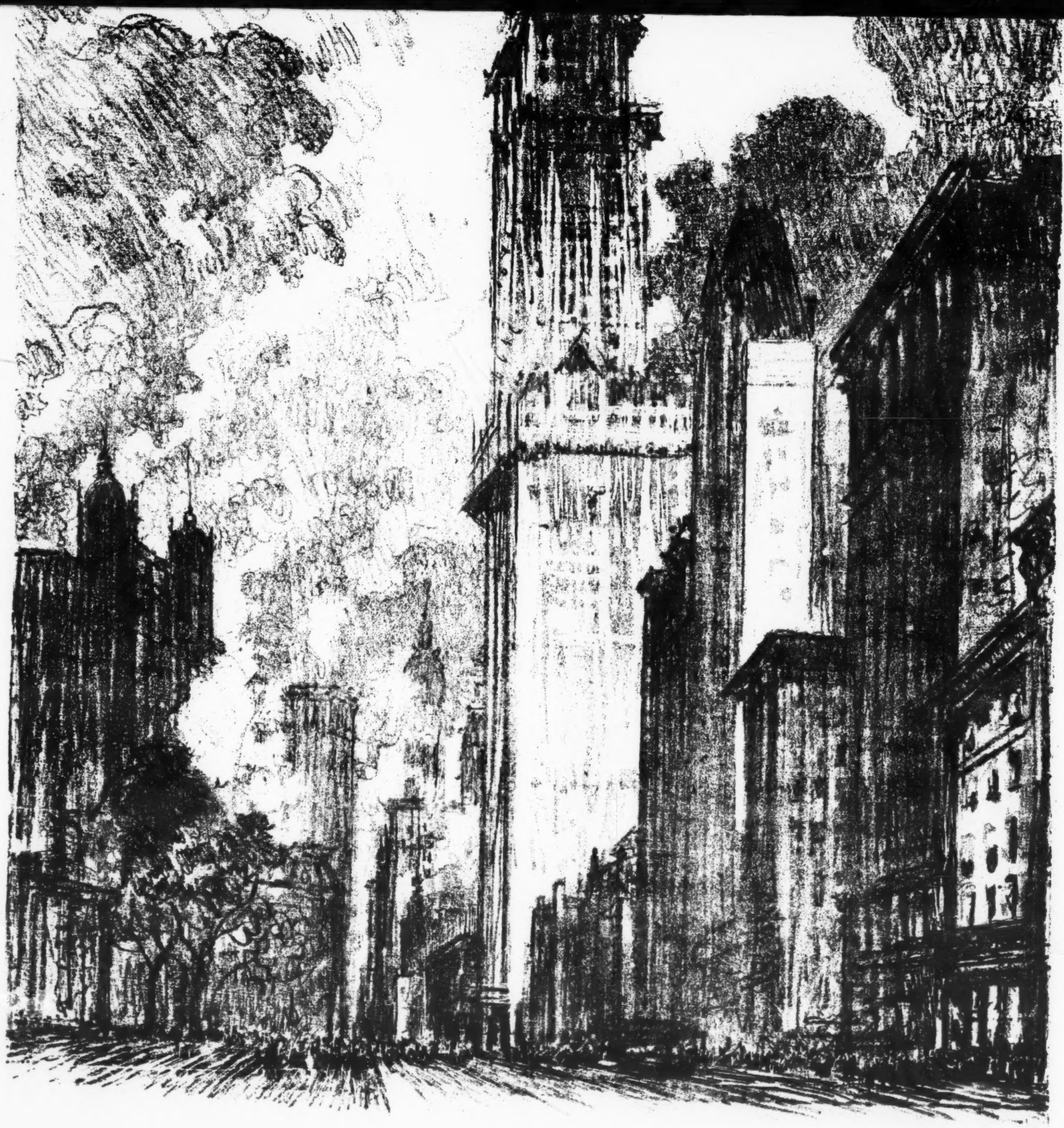




THE VULCAN SHIP-BUILDING YARD, HAMBURG.—FROM A LITHOGRAPH BY JOSEPH PENNELL.



THE HARBOUR, GENOA.—From a Lithograph by Joseph Pennell.



NEW YORK.—From a Lithograph by Joseph Pennell.